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[PRICE 6D.

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"To Sir J. Murray. Tenthill's Hotel, Dawson-street, Dublin, Feb. 19, 1839."

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ON LOCOMOTIVE BOILERS.

Locomotive boilers consist of three portions—the cylinder, containing the tubes, the fire-box, and the smoke-box; of which the cylinder, smoke-box, and external fire-box are always of iron, but the internal fire-box is generally made of copper, though sometimes also it is made of iron. The tubes are sometimes of iron, but generally of brass, fixed in by ferrules. The whole of the iron plates of a locomotive boiler which are subjected to the pressure of steam, should be Low Moor and Bowling plates of the best quality; and the copper should be coarse grained, rather than rich or soft, and be perfectly free from irregularities of structure and lamination. The thickness of the plates composing the barrel of the boiler varies generally from five-sixteenths to three-eighths of an inch, and the plates should run in the direction of the circumference, so that the fibres of the iron may be in the direction of the strain. The diameter of the barrel commonly varies from 8 ft. to 3 ft. 6 in.; the diameter of the rivets should be from eleven-sixteenths to three-fourths of an inch, and the pitch of the rivets, or distance between their centres, should be from seventeen-eighths to two inches. The thickness of the plates composing the external fire-box is, in general, three-eighths of an inch, if the fire-box is circular, and from three-eighths to one-half inch, if the fire-box is square; and the thickness of the internal fire-box is, in most cases, seven-sixteenths, if copper, and from three-eighths to seven-sixteenths of an inch, if of iron. Circular internal fire-boxes, if made of iron, should be welded rather than rivetted, as the rivet heads are liable to be burnt away by the action of the fire; and when the fire-boxes are square, each side should consist of a single plate, turned over at the edges with a radius of 8 inches, for the introduction of the rivets. The space between the external and internal fire-boxes forms a water space, which must be stayed every 4 ft. or 5 in., by means of copper or iron stay-bolts, screwed through the outer fire-box into the metal of the inner fire-box, and securely rivetted within it: iron stay-bolts are as durable as copper, and their superior tenacity gives them an advantage. The tube plates are generally made from five-eighths to three-fourths of an inch thick; but seven-eighths of an inch thick appears to be preferable, as when the plate is thick the holes will not be so liable to change their figure during the process of ferruling the tubes. The distance between the tubes should never be made less than three-fourths of an inch, and the holes should be slightly tapered, so as to enable the tubes to hold the tube-plates together. The ferrules are for the most part made of steel at the fire-box end, and of wrought-iron at the smoke-box end, though ferrules of malleable cast-iron have in some cases been used with advantage: malleable cast-iron ferrules are almost as easily expanded when hammered cold upon a mandril, as the common wrought-iron ones are at a working heat. Spring-steel, rolled with a feather edge, to facilitate its conversion into ferrules, is supplied by some of the steel-makers of Sheffield, and it appears expedient to make use of steel thus prepared, when steel ferrules are employed. The roof of the internal fire-box, whether flat as in Stephenson's engines, or dome-shaped as in Bury's, requires to be stiffened with cross stay-bars, but the bars require to be stronger and more numerous when applied to a flat surface. The ends of these stay-bars rest above the vertical sides of the fire-box; and to the stay-bars thus extending across the crown, the crown is attached at intervals by means of stay-bolts. There are projecting bosses upon the stay-bars encircling the bolts at every point where a bolt goes through, but in the other parts they are kept clear of the fire-box crown, so as to permit the access of water to the iron; and, with the view of facilitating the ascent of the steam, the bottom of each stay-bar should be sharpened away in those parts where it does not touch the boiler. The internal and external fire-boxes are joined together by a C shaped ring, and round the fire-door they are connected by means of a copper ring, 1½ in. thick, and 2 in. broad—the inner fire-box being dished sufficiently outwards at that point, and the outer fire-box sufficiently inwards, to enable a circle of rivets, three-fourths of an inch in diameter, passing through the copper ring and the two thicknesses of iron, to make a water-tight joint. To find the proper length of bar requisite for the formation of a hoop of any given diameter, add the thickness of the bar to the required diameter, and the corresponding circumference in a table of circumferences of circles is the length of the bar. If the iron be bent edgewise the breadth of the bar must be added to the diameter, for it is the thickness of the bar measured radially that is to be taken into consideration. In the tires of railway wheels, which have a flange on one edge, it is necessary to add not only the thickness of the tire, but also two-thirds of the depth of the flange; generally, however, the tire bars are sent from the forge so curved that the plain edge of the tire is concave, and the flange edge convex, while the side, which is afterwards to be bent into contact with the cylindrical surface of the wheel, is a plane. In this case, the addition of the diameter of two-thirds of the depth of the flange is unnecessary, for the curving of the flange edge has the effect of increasing the real length of the bar. When the tire is thus curved, it is only necessary to add the thickness of the hoop to the diameter, and then to find the circumference from a table; or the same result will be obtained by multiplying the diameter thus increased by the thickness of the hoop by 3.1416.

The upper portion of the external fire-box is usually formed into a steam-chest, which is sometimes dome-shaped, sometimes semi-circular, and sometimes of a pyramidal form, and from this steam-chest the steam is conducted away by an internal pipe to the cylinders; but, in other cases, an independent steam-chest is set upon the barrel of the boiler, consisting of a plate-iron cylinder, 20 in. diameter, 2 ft. high, and three-eighths of an inch thick, with a dome-shaped top, and with the seam welded and the edge turned over to form a flange of attachment to the boiler. The pyramidal dome, of the form employed in Stephenson's locomotives, presents a considerable extent of flat surface to the pressure of the steam, and this flat surface requires to be very strongly stayed with angle irons and tension rods; whereas the semi-globular dome of the kind employed in Bury's engines requires no staying whatever. The man-hole, or entrance into the boiler, consists of a circular or oval aperture, of about 15 in. diameter, placed in Bury's locomotive at the apex of the dome, and in Stephenson's upon the front of the boiler, a few inches below the level of the rounded part; and the cover of the man-hole in Bury's engine contains the safety-valve seats. In whatever situation this man-hole is placed, the surfaces of the ring encircling the hole, and of the internal part of the door or cover, should be accurately fitted together by scraping or grinding, so that they need only the interposition of a little red lead to make them quite tight when screwed together. Lead or canvas joints, if of any considerable thickness, will not long withstand the action of high-pressure steam; and the whole of the joints about a locomotive should be such, that they require nothing more than a little paint or putty, or a ring of wire-gauze smeared with white or red lead, to make them perfectly tight. There must be a mud-hole opposite the edge of each water space, if the fire-box be square, to enable the boiler to be easily cleaned out, and these holes are most conveniently closed by screwed plugs made slightly taper. A cock for emptying the boiler is usually fixed at the bottom of the fire-box, and it should be so placed as to be accessible when the engine is at work, in order that the engine-driver may blow off some water if necessary, but it must not be in such a position as to send the water blown off among the machinery, as it might carry sand or grit into the bearings, to their manifest injury. To save the steam which is formed when the engine is stationary, a pipe is usually fitted to the boiler, which, on a cock being turned, conducts the steam into the water in the tender, whereby the feed-water is heated, and less fuel is subsequently required. This method of disposing of the surplus steam may be adopted when the locomotive is descending inclines, or on any occasion where more steam is produced than the engine can consume. The fire-bars in locomotives have always been a source of trouble, as, from the intensity of the heat in the furnace, they become so hot as to throw off a scale, and to bend under the weight of the fuel. The best alleviation of these evils lies in making the bars deep and thin: 4 inches deep by five-eighths of an inch thick on the upper side, and three-eighths of an inch on the under side, and found in practice to be good dimensions. In some locomotives a frame carrying a number of fire-bars is made so that it may be dropped suddenly by loosening a catch, but it is found that any such mechanism can rarely be long kept in working order, as the molten clinker, by running down between the frame and boiler, will generally glue the frame into its place.—*Bourne's Steam-Engine*.

SOUTH DEVON ATMOSPHERIC RAILWAY.—On Friday four additional trains up and down, between Exeter and Teignmouth, commenced running by atmospheric power, and both express trains will be worked in a similar manner. Several of the trains will be worked atmospherically to Newton in the present week, and it is intended to remove locomotive engines from the line above Newton from the 1st January. The utmost confidence is placed in the atmospheric mode of traction; nothing can exceed its regularity.—*Devon Telegraph*.

VEGETABLE TALLOW.—A parcel of an article called vegetable tallow has recently been imported into the port of Liverpool, by a vessel arrived from Shanghai, China, which was declared for the duty by the parties as tallow; but the revenue officers there considering the article to be spermacetti, detained it for the *ad valorem* duty of 25 per cent., chargeable on that substance. It appears that this is the first importation of this article into the port of Liverpool from the Chinese empire, although it is well-known at this port, in which it has frequently been brought, as vegetable tallow. There is an immense difference of duty between the two articles, tallow and spermacetti, and, as we believe, it has been customary to permit the delivery of such parcels as have been imported into the port of London under the tallow duty, it is most probable that, even without reference to a desire of encouraging the trade between this country and China, for the sake of uniformity, the same course will be pursued in regard to the present arrival.

TWO BAD LEGS CURED BY HOLLOWAY'S OINTMENT AND PILLS, AFTER MORE THAN SEVEN YEARS' SUFFERING.—Mrs. Elizabeth Humphreys, of York-street, Hull, had been most painfully afflicted for upwards of seven years with ulcerated sores in both legs; her sufferings at times were dreadful—she had tried almost every remedy, and received the advice of several of the first surgeons in Yorkshire—yet all failed to effect a cure, until she used Holloway's invaluable ointment and pills, the astonishing powers of which soundly healed every wound. She is now in the enjoyment of the best of health, and enabled to walk about with ease and comfort.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

IRON, HARDWARE, AND METAL TRADES' PENSION SOCIETY.

In our columns of the 11th Nov. two advertisements appeared, relating to the above society, and to which it was our intention, ere this, to have directed the more particular notice of our readers. The present moment appears to us to be peculiarly applicable, as, in taking a retrospective glance of the events of the "old" year, it is pleasing to hold out prospects of the "new." The benevolent course heretofore pursued by the promoters and advocates of the society is, we are happy to find, not only progressing with those prospects of success, which were augured in its early stages, but, judging from the past, with pleasing indications of growing prosperity; while it is gratifying to find, that the late election has added four additional recipients of its bounty, making nine in all, entitled to pensions of from 14 to 20 guineas per annum. As a satisfactory proof of the wisdom, as well as the benevolence, features which the society presents, we may advert to the alteration introduced into its constitution in January last, by which its benefits are rendered accessible to all deserving and necessitous members of the trades, whether subscribers or not. This is as it should be, and will, we feel assured, meet with the approbation of every liberal mind; while it must tend materially to aid the funds of the institution, and thus give them increased powers to follow on their praiseworthy course in doing good, and relieving the necessitous and distressed. The present moment—when the greatest pleasure and delight which can be afforded to those possessing the means, and which are derived from the labours of the recipients of this fund, and their fellow workmen—is one which, we feel assured, will be availed of by many, to contribute their mite in aid of the distresses of those to whom they are indebted; and, as evidence of the growth of kindly feeling and philanthropic charity displayed in the several branches of trade, to which this society directs its attention, we are happy to state, that the income of the society, derived from donations and annual subscriptions (which, in 1846, fell short of 325*l.*), for the current year, exceeds 1000*l.* This, we repeat, is as it should be, and is most gratifying to all parties concerned; while we may indulge in the hope, that the coming year will afford still higher encouragement to the benevolent promoters of this valuable institution, by the accession of many wealthy individuals to the ranks of its supporters, who derive large incomes from the iron, hardware, and metal trades. It was, we must admit, with some surprise, and a sorrowful feeling, if the expression may be employed, that, in looking over the list of subscribers, we found the absence of several highly-influential and respected names, and which we can only attribute to the objects of the society not having been submitted to them in that manner, or introduced through that channel, which would at once claim, while it well merits, their attention. In thus noticing the society, we do so as one of its friends and advocates, inasmuch that, through the medium of our columns, weekly, the result of experiments with scientific research, the yield of the furnace, the cupelo, and the rolling-mills—the current prices of "iron, hardware, and metal," are rendered as the result of the labours of those for whose aid and benefit it has been formed; and hence we feel an interest in its welfare—while we are convinced the courtesy and attention of the hon. secretary, Thomas Hawkins, Esq., 67, Upper Thames-street, will secure any further information which may be desired.

PREVENTION OF ACCIDENTS IN COAL MINES.

Last week a paper was read on the above subject, by Mr. Spence, at the Manchester Mechanics' Institution. After a few preparatory observations in reference to the calamitous results usually attendant on accidents in coal mines, Mr. Spence observed, that many efforts had been made by those immediately connected with the working of collieries to lessen the danger of explosions. It was true, also, that with a regular system of ventilation, thoroughly carried into practice, and by the adoption of all well-known protections, the danger had been very much lessened, even in those pits where the evolution of inflammable gas was so abundant, as to make an explosion a possible occurrence at any moment.

When such regulations were adopted, immunity from accidents was a prominent feature in particular workings, but even the fact of that security being obtained was one of the elements of danger; for any one conversant with the generality of working men must know that safety in the midst of danger tended to make them regardless of the rules they ought to observe. It was, therefore, essential that some method should be adopted which should exclude the prudence of the working man from amongst the means of security. Mr. Spence then explained the cause of explosions in mines. The process of mining coals, he said, tended to set at liberty varying, but abundant, quantities of two gases. These gases, probably sent up previously within the strata, were set at liberty when the strata were broken up, sometimes silently and imperceptibly, and at others with considerable force and influence. These gases were termed the choke-damp, and fire-damp. The choke-damp was carbonic acid gas, unflammable in itself, and destroying combustion wherever it came in contact with it. Being detrimental to human life, it was one of those things which rendered ventilation more requisite where it abounded. The fire-damp, which was a combination of hydrogen gas and carbon, and sometimes sub-carbonated hydrogen, was the cause of the explosions. The constituents of this gas were the same as those of the gas used for lighting the streets; in the gas artificially made, however, carbon was more abundant. In the gas from mines, hydrogen predominated, there being two parts hydrogen to one of carbon. Its specific gravity was 5.5, half the weight of atmospheric air. Hence it ascended, and the highest parts of the mine were in consequence the most liable to explosions. The gas, however, was not explosive *per se*, but only when mixed with certain proportions of common air, one part of the gas to 10 parts of air being the most perfectly explosive compound. As in a great proportion of coal pits, the evolution of fire-damps was constantly taking place, some means of getting rid of it were deemed absolutely necessary. Ventilation was the most apparent, and had all along been the most efficient, remedy; but as his plan involved no change in this respect, he should not enter into the details of the various modes of ventilation that had from time to time been adopted. Suffice it to say, that the danger of explosions still existed, for ventilation had not effected the object sought to be accomplished, nor was it probable that it ever could. Another means of averting the danger of explosions, sometimes tried, was by fighting the enemy with his own weapon, and setting fire to the gas. If this could be done with certainty and security, it might perhaps be efficient. For some time it was questioned whether this might not be attempted by some arrangement of electric or galvanic currents, ramified through all the workings of the pit; the practicability, however, of this mode was very problematical, and the promise of success not very great. Another class of expedients adopted was that of separating and insulating the atmosphere of the pit from combustible contact with the source of light. The most eminent effort in this department, which stood out in relief from all others, was the splendid discovery of Sir Humphrey Davy. Mr. Spence then explained the principle on which the Davy lamp was constructed, and showed that, although it was a valuable discovery, it had not materially lessened the danger of explosions in mines. The principle which (Mr. Spence) aimed at, was the production of a perfect insulation of the source of light from the atmosphere of the pit. He proposed that all coalpits should be fitted up with an apparatus for the production of coal-gas, consisting of main pipes and branch fittings, peculiarly adapted to the circumstances of the case. The mode of fitting up the pipes would be by a system of flexible joints of vulcanised caoutchouc between the lengths of the cast-iron pipes—these would serve the purpose of preventing leakage. The gas-pipes would be a main gas-pipe from the gas holding down the shaft to the bottom of the pit, branch mains from these to the several underground workings, and then branch service pipes to the several lamps to be used. Another series of pipes would also be required for the conveyance of air from the atmosphere above ground; this would be by one main pipe down the shaft, with branch mains and service pipes from them to each lamp. The burners of the lamps would be constructed on the principle of causing the air admitted from the air pipe, with which each lamp would be furnished, to be spread in a thin stratum around the flame, so as to effect its combustion, and afford a maximum supply of light from a limited supply of air. The lamps might be constructed with two gas cylinders, the one encasing the other in case of breakage, these being accessible to none but the superintendent. Another series of pipes would also be required to convey from the lamps the product of the combustion to the atmosphere above ground—these he would call waste pipes. Various other details were enumerated connected with the proposed plan, and Mr. Spence expressed himself willing to give his services to any gentlemen who were disposed to try the experiment. A short conversation ensued, as to the practical working of the plan, in the course of which Mr. Spence was asked if he had calculated the expense, to which he replied in the negative.

EARTH'S EARLY INHABITANTS.—It is strange that, in a thin bed of fine clay, occurring between two masses of sandstone, we should thus have convincing, but unexpected, evidence preserved concerning some of the earth's inhabitants at this early period. The ripple-mark, the worm track, the scratchings of a small crab on the sand, and even the impression of the raindrop, so distinct as to indicate the direction of the wind at the time of the shower, these, and the footprints of the bird and the reptile, are all stereotyped, and offer an evidence which no argument can gainsay, no prejudice resist, concerning the natural history of a very ancient period of the earth's history. But the waves that made that ripple-mark have long ceased to wash those shores; for ages has the surface then exposed been concealed under great thicknesses of strata; the worm and the crab have left no solid fragment to speak to their form or structure; the bird has left no bone that has yet been discovered; the fragments of the reptile are small, imperfect, and extremely rare. Still enough is known to determine the fact, and that fact is the more interesting and valuable from the very circumstances under which it is presented.—*Ansted's Picturesque Sketches of Creation*

MEETINGS DURING THE ENSUING WEEK.

On Mining, & the Practical Applications of Geological Science.
FROM ANSTON'S LECTURES, AT KING'S COLLEGE.

On Mining, & the Practical Applications of Geological Science.
FROM ANSTON'S LECTURES, AT KING'S COLLEGE.

LECTURE XII.—THE PRACTICAL APPLICATION OF GEOLOGICAL SCIENCE TO MINING—
THE ENGLISH AND WELSH COAL-FIELDS.

Light would be gathered (said Prof. ANSTED), from the preceding lectures, that the Newcastle coal-field was remarkable for the convenient thickness of its beds, which mostly ranged from 4 ft. to 7 ft.; the generally uniform nature and good quality of the coal itself; the immense quantities of gas which it poured out; and the great depths at which it was worked. All these peculiarities influenced, more or less, the modes in which the mines were there conducted; and he believed that, on the whole, no methods superior to those employed were in operation elsewhere.

Passing on from the Newcastle coal-field, they would have to consider, next, the methods of working in the other coal districts of England. These depended very much upon the thickness of the beds, which, in some instances, were extremely thin, and sometimes many times thicker than those of Newcastle; they depended, also, upon the nature of the coal, and partly upon local prejudices and fancies. The common methods employed, however, were hardly founded upon special laws or circumstances; neither was the anything very peculiar in the coal itself which caused the adoption of those methods—so that they were, he might say, chiefly attributable to the fancies and whims of individuals. The coal districts of England, now to be described, might be divided into three groups, which would include all the coal-bearing strata of the country. The first group would be as part of the Newcastle and, and, proceeding southward, the next group would be the Lancashire, including the beds of Yorkshire on the one side of the island, and those of Lancashire on the other, extending down to Nottinghamshire on the east; to North Staffordshire, in the middle of England; and on the extreme west, taking in the beds of the northern counties of Wales. Of these, the most remarkable were the beds of Lancashire, which presented the best development of the coal series to be found anywhere. Indeed, the perfection of this series was extraordinary, and the extent of the field was also considerable, being 46 miles in one direction, by 40 in the other. The southern portion was intruded upon by the Carboniferous sandstone, under which it was worked partly at present, and under which it would, ultimately, be worked to a very considerable and an enormously greater extent. The whole number of seams, including many very thin ones, and some of considerable thickness, was between 600 and 700. They might very well be divided into three groups—the lower of which contained six workable seams; the middle, three; and the upper, five—the thickness of the whole being about 150 ft. The material between the seams was sometimes a sandstone of very fine grain—occasionally intermixed with fragments of carbon, and sometimes a purely argillaceous matter, mixed with sandstone; the argillaceous matter being common clay, coloured by carbonate of iron, and sometimes so fine a clay as to form fire-clay, and even pipe-clay. In some cases, and with these associated beds throughout the Lancashire, there was associated as its floor a band of fine clay, remarkable for its containing large quantities of the fossil vegetable called *stigmaria*. Nearly all the beds of coal in England were associated with the clay in which these *stigmaria* were found; and that was a most interesting fact, not only geologically, but also in a practical sense. This clay often contained a great quantity of vegetable carbon, and at other times it was a tolerably pure silicate of alumina. The total thickness of the workable beds in the district was, as he had said, 150 ft.; but, as he was not personally so familiar with the systems of working as he was with those of Newcastle and some others, he would not attempt a description in detail. In the Newcastle and some of the other districts, the seams were not extraordinarily deep, were conducted on the "post and wall" system, the coal being raised by means of a small, moderate size; but different systems were practised in different parts of the district. The quantity of gas given out was much less than in the Newcastle coal-field, but more than in that of Yorkshire.

The Yorkshire coal-field contained some beds as thick as 17 ft., and others as thin as 2 ft. or 3 ft. These were, however, all very manageable dimensions—some of those thin as they were in the Lancashire coal-field being but from 18 in. to 20 in. The latter were, however, mainly of the *lignite* class, and usually found in these thin seams were what was called *“wannel coal”*, a very bituminous coal, the particles of which, when rolling the fingers when touched. These highly bituminous coals were generally found associated with lignites. In Yorkshire, the *“long-wall”* method of getting coal was the one usually practised; by this plan a considerable quantity of coal was obtained, leaving nothing but a long wall to support the passages, the greater part of the roof being supported to fall in. This method involved an important difference from that in use in the Newcastle coal-field, in that the coal was obtained by blasting, without much reference to its nature; but in Yorkshire the nature of the coal determined the structure of the mine. The first operation, after sinking the shaft, was to run a long gallery, or strike of the coal horizontally, and not on the dip, as in Newcastle. This *“drift”* was used in connection with the drainage of the mine, and communicated with a second gallery, run parallel to the first. The whole drainage of the mine ran into this second gallery, which was called the *“water-gate”*; and the water was pumped out by a second shaft, and gave no further trouble. The ventilation was also, by this second shaft, rendered at once manageable, by the means of *“curtains of cooling air”*, varying a little, however, from the Newcastle method. A main gallery, or *“water-gate”*, was also run, in the Yorkshire coal-field, called the *main-board-gate*. The word *“gate”*, which was constantly used in Yorkshire, was a very proper one—it was derived from the old Saxon verb *gangan*, to go, and signified a road or way. The *main-board-gate* was the widest and most important gallery in the mine; it was invariably run on the rise of the coal, at right angles with the strike, and as far as it was expected the works would be carried. The area generally worked was from 20 to 40, or 30, 40, or 50 acres, according to the nature of the coal. A narrow trap into a number of portions, each of *“main-board-gate”* was run, and the main-board-gate was then cut from each of the *main-board-gate* around each portion, which was then gradually worked out. The walls of the *main-board-gate*, and of the passages, were often gradually removed by propping the roof, in the ordinary way. The method of working the coal was by working under it, and wedging it down; and, attention being paid to the structure of the coal, 30 and 40 yards were often brought down together. It comes down to the miner, and is much less broken state, than the smaller seams in Newcastle did, and is much better adapted for the use of coal-gas, and, in fact, the ventilation is not so well managed round these large seams, and, in fact, if the coal were as fiery and the issues of gas as plentiful and as violent, as in the Newcastle pits, the ventilation could not be managed in this way. The Yorkshire coal-field, although not free from issues of gas, had comparatively so little, especially in blowers, that it was readily carried away, even without the aid of a furnace. [The lecturer here exhibited some interesting diagrams of the attitudes of the miners who worked these small seams.]

The next coal-field, in the Midland Counties and South Staffordshire, rather to the western part of those counties, was the *“fire-brick”* coal-field. It was smaller, and the area was small, being about 8 or 10 miles in one direction, by 4 or 5 miles in another. The thickness of the coal in South Staffordshire was much greater than in any other district in England; and the methods of getting the coal were, consequently, different, as might be supposed, from circumstances and conditions so different. The thickness varied from 6 or 7 ft. to as much as 40 ft.; and though, in the latter, the whole mass was worked, in the former the thinning beds were so trivial that the whole was worked together. These bands consisted of *“fire-brick”* coal, and, in fact, the coal was so hard and so large as to make it as black as the coal in appearance; and, judging only by that appearance, the seam would be pronounced to be 40 ft. thick, of unmixed coal. A good deal of management was requisite in getting these very thick seams; but the system usually employed was hardly calculated to obtain the largest proportion that the circumstances admitted. In most cases a large proportion of the whole was left underground, or *“concentrated”* in *“slacks”*. There was, no doubt, great difficulty in working this coal; but, at the same time, it was equally true that the methods of working were more irregular than they need be. [The lecturer exhibited a diagram, showing the ground plan of a mine in Staffordshire.]

From this it appeared that the quantity of coal left in pillars was very small as compared with the quantity removed; but Professor Ansted remarked upon that apparent contradiction of his foregoing remarks, that a great deal of coal was left at the top and bottom of the galleries. The shaft being sunk, whatever plan might be adopted they invariably got to the bottom of the coal first; a tolerably large gallery was then run along the floor, and sometimes air galleries of a smaller diameter were run parallel to it, and communicating with it by small openings, to convey the returning current. The coal was then mostly got without any plan, and the pillars were left almost entirely at the discretion of the subordinate workmen. One reason why this neglect of system was, generally, due to the circumstance, that the beds were near the surface. If they had been deeper, it was probable that it would have been necessary to lay out a plan, and to work more by each pair of pillars, than was the case. The neglect of the neighbourhood of the pillars, and the want of a plan, were the two principal causes of the mismanagement of Dudley and Birmingham was to undercut the coal. The person, to whom the mineral belongs, sinks a shaft, and underlets the coal to men little or nothing above the level of common workmen in point of intelligence. This man undertakes to get the coal, and engages his own workmen for that purpose, reletting it, in portions, perhaps to half-a-dozen others—thus there is little or no reference to a general plan of operations. These men are too often remarkable for their ignorance of general principles and disregard of everything but their immediate and pressing interests. Under such a system as this, it was not to be wondered at that the details varied in every mine.

The next coal-field he came to was that of South Wales, which was very important. It covered a great extent of country, and extended into the Forest of Dean on the east, and into Somersetshire on the south. There were numerous beds associated with the coal, and the total thickness of the coal was enormous. The coal was of a very enormous thickness, as compared with any other in England. The area of the district might be reckoned at 100 square miles, and the quantity of coal per acre about 100,000 tons. The seams were very numerous, and of them 12 principal ones had been worked, and the thickness of each seam varying from 3 in. to 9 ft.; there were 11 more seams which were not worked, and the thickness of these varied from 3 in. to 3 ft. in thickness. Besides these, there were 15 other recognised seams of coal, which were not worked. The coal was of a very enormous value. This field was divided into two portions, the one bituminous and the other anthracite. There was a remarkable circumstance connected with the latter, which was, that it contained carburetted hydrogen, and was fiery. The general plan of ventilation was to work the mines of South Wales was very imperfect, and, indeed, could not be considered a system. The working plan consisted of little more than digging down a shaft, getting it out as quickly as possible, and then raising it up, and then digging another pit. Two evils resulted from this mode of mining – first, that the upper seams were injured; and, secondly, there being no plans, a continual system of robbery was given to the district. The latter was the effect of the comparative impunity which the system gave to the district. The result was, that the coal was not worked in a systematic manner, and the coal was obtained, an examination was impossible. But when, after some time, the owner of the property sunk a shaft, instead of the old one, and then the coal was obtained in an explosion and loss of life was the consequence. These were only some of the evils of this want of system. Indeed, in all districts in England, sufficient attention was not paid to the collection and preservation of mining records, and the state of deserted mines; but in South Wales, and in the Forest of Dean, if any plan ever was made of a mine, it was never looked after after the coal was extracted.

There was one peculiarity in the geological conditions of these coal-fields well worthy of notice. The Newcastle district was remarkable for its great number of faults, from the dimensions of a few inches to 100 fathoms. These faults were constantly met with, and their relations to each other were so well defined, as to enable them to be calculated

On. There also the seams were so regular, that they differed very little in thickness for a great distance. But when they come to the coal-fields of the south of England, particularly those of the Forest of Dean and South Wales, there were frequently found remarkable irregularities, called "*horses*."¹⁷ When these *horses* occurred, the coal disappeared all at once, but yet without any fault at all. These horses had to be cut through, and after a time the coal reappeared. It was as though the beds of sandstone, or whatever was the material of which the "horse" was composed, had been upheaved through the coal; but it was far more probable that the real case was different, and that there had been a local interruption in the deposit. The seams here also varied in thickness in a very extraordinary manner, and were not only so, but they were also found very much built up in a manner accustomed only to the mines of Newcastle or Staffordshire.

The coal measures were frequently associated with beds of argillaceous carbonate of iron, which occurred so regularly as to justify their being looked upon as a part of the series. In like manner, it was customary to find portions of vegetable matter contained in nodules of iron ore. In the valley of the Clyde, particularly in the neighbourhood of Glasgow, this was also the case; and in England, the coal measures of Wales and Staffordshire were noted for similar conditions.

[The following lecture, which contains an account of the various coal-fields in other parts of the world, and a general view of their relation to each other, will appear in the next week's *Mining Journal*.]

BY DR. BARHAM.

Read at the annual meeting of the Royal Institution of Cornwall.

The accidents and diseases which befall our miners, always claim attentive consideration in this county, and the renewed interest given to the subject by some observations from Mr. Blee, at the recent Polytechnic Meeting, has induced me to lay before you a few notes, which may serve to illustrate it in some slight degree, although of a rather desultory character. It would appear that there is a want of definite information as to the proportionate influence of particular causes of fatal mine accidents. The results of the inquiry made by myself under the Children's Employment Commission are, I believe, sufficiently good to be generally applicable to mines, where the element is affected by large numbers; but blue books do not form a portion of popular literature. Returns were made to me in 1841, from 33 mines, in which one or more fatal accidents had occurred during the two preceding years. About 15,000 males were employed in these mines, of whom 12,409 were adults. The number of fatal accidents were 75, and of these 70 happened to adults. Of the 75 accidents, 10 occurred at the surface, five of which arose from the bursting of a boiler at Consols, three from entanglement in machinery, and two from other causes. Of the 65 which happened underground, 8 arose from blasting, 25 from falling, 20 from ground or stones falling, and in respect of the remaining 3, no cause has been mentioned. The details are given in the following table:—

Mines.	Depth in fms.	No. employed.*	Blasting.	Falling.	Ground Falling.	No cause mentioned.
Wheal Owles	150	188	1	—	—	—
Levant	260	460	—	2	2	—
Balleswidden	85	535	—	—	1	—
Botallack	190	147	—	—	—	1
Bosweddan	75	90	—	1	—	—
Providence	120	116	—	1	1	—
Ding-Dong	100	269	—	—	1	—
Roeth Consols	90	114	—	1	1	—
Godolphin	110	—	—	—	1	—
Wheal Julia	135	—	—	2	—	—
Carlaze	120	—	2	2	—	—
Wheal Prosper	78	184	—	—	—	1
Wheal Friendship	100	214	—	—	—	4
Wheal Virgin	125	196	—	1	2	—
East Wheal Crofty	130	619	—	1	—	—
Dolcoath	190	451	—	—	1	—
Great Wheal Prosper	20	28	—	—	2	—
Restormel	50	94	—	—	2	—
Tretil	60	108	—	1	1	—
Carnemorry	30	122	2	—	—	—
Charlestown	85	430	—	—	3	—
Fowey Consols	230	1067	—	2	3	—
Wheal Betsey (Devon)	120	119	—	1	1	—
Tamar	145	61	—	—	1	—
West Wheal Jewel	115	107	1	—	1	—
United Mines	230	739	—	3	—	—
Consols	300	1003	—	3	—	—
Trenewan	290	521	2	4	—	—
West Jewel	150	207	—	1	—	—
Graubler, &c.	43	40	—	1	—	—
Royal Polbrou Con.	130	152	—	—	—	—
Wheal Coates	75	133	—	—	2	—
Cornubian	55	100	—	1	—	—
Total			8	25	26	6

In the sixth report of the Registrar-General, is an elaborate analysis of the deaths by violence, which occurred in 1840, among individuals aged 20 and upwards, in all the different classes of the community. Among the miners, one in five of the five worst by number of deaths, of these deaths, and of these three were occasioned by machinery; 13 by falls of stones, &c., four by falls, seven by mechanical injury not specified, one by drowning, two by explosion (blasting), and in 18 the nature of the accident was not specified. This is, I believe, almost all the direct information we have respecting the proportion of the causes of fatal accidents in our mines, and it does not seem likely to lead to erroneous conclusions where no man-engine has been introduced. In estimating the mischief arising from mine accidents, we must, however, add to the direct loss of life thus occasioned, not much less than 20 per cent. of the total deaths, a further list of cases which prove ultimately fatal from injury inflicted on vital organs, as well as a great number of individuals permanently disabled for almost any mode of gaining a livelihood, when loss of sight has been sustained, and the detention from work occasioned by the most curable injuries. This last item is of very considerable amount. I had a return from the United Mines of 77 cases of this temporary disabling by accident, in two years, in which only one death was thus caused; and from East Wheel Crofty, I was furnished with the particulars of 91 such less injuries in the year 1840, which occasioned a total loss of time of about 800 days.

It may be desirable to place by the side of these results, a statement of the number and causes of fatal accidents in our collieries. Independently of the interest belonging to these facts in themselves, to Cornishmen especially, some useful instruction may be derived from them, as they show the amount of accidental deaths in connection with particular methods of ventilation, and in making the men to go down from their work, and with other arrangements which have been taken from time to time, and which have brought them to the surface, and are accessible to our own mines. The facts, of which I shall offer a summary, are chiefly derived from the reports of the Children's Employment Commission. The evidence is derived from two main sources. The first is a statement of the deaths by accident in the coal mines of the Tyne and Wear districts, in Durham and Northumberland, from 1799 to 1840. The second exhibits the mortality from this cause; in the year 1838, in 55 Poor Law Unions containing mines, and having a population of 2,250,000. To this last I shall add the analysis of the fatal accidents which occurred in 1840, giving by the Registrar-General, the results of which, as far as our own miners are concerned, I have already stated. The former body of evidence, extending as it does over a long period, will serve to obviate any miscalculation which might arise from a casual excess or deficiency of a particular kind of accident in a single year; whilst the latter, applying to so large a portion of the country, and to a population of nearly 2,000,000, will mislead from the fact that a portion of the accidents which exist in certain accidents in single districts. In the 40 years then comprised in the former statement, there have been ascertained to have occurred in the Tyne and Wear Collieries, 1480 deaths from accident. The men and boys employed there, are about 21,000, and about five-eighths of these work underground.

It will presently appear that of those accidents a very small proportion occurred on the surface, and we may safely infer that more than 1300 deaths were thus occasioned underground, and that the average annual mortality among the 13,000 miners working here was from 32 to 35. This rate is nearly one-third less than the result stated above of my own inquiries in our mines, where 65 persons perished in this way in two years, among about 9000 employed underground.

Of the 1480 deaths in the collieries, 1468 were occasioned by 147 specified accidents.

Kind of Accident.	No. of Accidents.	Deaths caused.
Explosions and consequences	87	1242
Suffocation by gases in the pit	4	18
Inundations from old workings	4	83
Falling of earth, rubbish, &c.	15	33
Chain or rope breaking, &c.	13	45
Run over by ralleys and waggons	13	13
Boilers bursting	5	34
Total	147	1468

It will be observed that 13,325 deaths, nine-tenths of the whole, were caused by explosions or inundations. These are the appalling accidents of the coal mines to which our work scarcely ever present a parallel; for, though 12,422 deaths were distributed over 87 explosions, yet a great many of these were attended with very large loss of life; in 17 instances, more than 30 lives were sacrificed at once, and in one of these 92, in another 102, were swept off; so in the case of inundations, of the 83 killed by four accidents, 75 were lost in one. In the West of England, where the coal mines have been worked since the East Wethal Rose Mine last year, we believe quite unprecedented in the West of England, and may be said to have arisen from causes wholly foreign to the conditions properly belonging to our mining operations. With regard to 18 of the 45 deaths arising from accident in ascending or descending the shaft, it is merely stated that the parties fell down the shaft," or were "crushed by a fall"—it is, therefore, uncertain how far these instances the result was connected with the method of ascent or descent, which would be the case if the men had been lowered down the shaft who is lowering to his work and taken up again by machinery in a bucket or box of some kind, varying at different periods and in different collieries in size, form, and security.

The second body of facts is that furnished by the district register of deaths for 1838 and 1840. From the 55 unions to which the statement for the former year relates, I have separated 36, in which the mines of this county are chiefly situated, and containing above 100,000 inhabitants. In the other mining districts of England and Wales, having a total population of nearly 2,000,000, the deaths by accident distinctly recorded as having happened in 1837, and of these 34 were under the age of 15. In the 36 Cornish districts 34 were killed, of whom four were under 13. The registered causes are shown in the following table, in which Cornwall is distinguished from the other parts of the country:—

Cornwall.	Other Mining Dis.
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36

Fell down the shafts.....	9	61
Ditto from rope breaking.....	3	3
Fell out when ascending.....	3	3
Drawn over the pulley.....	—	6
Fall of stone out of a skip.....	—	4
Drowned in the mine.....	1	21
Fall of stones, coal, and rubbish.....	4	53
Crushed in coal pits.....	—	2
Explosion of gas.....	—	8
Suffocated by gas.....	—	8
By tram waggon.....	—	21
Explosion of gunpowder.....	2	2
Injuries in coal mines and mines, nature not specified.....	18	53

I have already stated the results in relation to our own miners of the analysis of the

violent deaths which occurred in 1840, given by the Registrar-General, and distinguishing the occupations of the sufferers. We are here furnished with materials for comparing the mortality from this table among miners with that in other classes of the community; and also, for comparing the several mining districts with each other in regard to the frequency and the kind of fatal accident. By the census of 1841, the number of males, 20 years old and upwards, employed in mines for coal, salt, and the metals, was 124,667. Among men of this age and class the violent deaths registered in 1840 were 498, of which seven were ascertained suicides. The only employment equally fatal in this way is the navy and merchant service, at home, which is more so, in the proportion of 4006 to 3939. Compared with the deaths from this cause amongst agricultural labourers, those of the miners were 3539 in 1821; and as 3856 to 940 compared to those among men of the same age in the community at large. It may be worth mentioning, by the way, that suicide was rare among the miners, its occurrence being less than half as frequent, in proportion to the total numbers, as in the class of agricultural labourers. The distribution of 483, out of the above 491 deaths by violence, among the several mining divisions of the country, may be seen, together with the relative operation of the principal causes, in the following table:—

Count.	Total deaths	Falls of Stones, &c.	Falling.	Explo- sions.
Wills, Dorset, Devon, Cornwall, Somerset,	48	13	4	3
Gloucester, Hereford, Salop, Worcester,	46	82	30	2
Stafford, Warwick	148			
Chester, Lancaster	76	25	16	12
York	38	8	6	13
Derham, Northumberland, Cumberland,	73	22	15	5
Westmoreland	101	15	6	10
Monmouth and Wales	704			

The precise nature of a large proportion of the accidents has not been specified, but this omission bears on all the districts, and enough is stated to furnish data for a comparative estimate. This may be further advanced by the following tabular view, drawn from the same report, of 195 instances of accidental death, in 1840, at all ages, and including 8 females:—

	By falling down	Falling down	Burns and	Suffocated
1840	10	10	10	10

Counties.	a coal pit or shaft.	a metal mine or shaft.	explosions.	by foul air.
Western Counties.....	1	7	—	—
Gloucester, Hereford, &c.....	36	6	12	—
Chester, Lancaster &c.....	30	—	17	4
York.....	11	—	22	—
Durham, &c.....	15	1	9	2
Monmouth and Wales.....	3	—	20	6
Total.....	96	14	73	12

It will be seen that in all these comparative statements, great differences are apparent among the several coal-fields in the prevalence of accidents. They are partly to be explained by differences in the beds of coal, partly by the superiority of the arrangements in certain districts, usually attendant here as elsewhere, on the greater extent of capital embarked. On these points I need not enter; my purpose having been to show the relative position as to risk of death by accident of two great classes of miners working under different circumstances, and passing to and from their place of work by a different mode of conveyance. It is to be regretted that the statistics of the fearful catastrophes unknown to our mines, is very far indeed from being effectually protected at present by being lowered and raised by the bucket system, from losing his life by falling himself, or by stones falling on him in the shaft.

I had intended to have made a few remarks on the general subject of the diseases of miners; but this paper is already so long, that I shall confine myself to a very brief notice of a species of consumption found amongst the colliers, which may furnish, I think, some valuable hints as to the nature of many cases among our own miners. The life of the collier is shortened by his occupation, like that of the miner, though not in most districts to the same extent. Where the two are brought together, as in some parts of Wales, the collier is found to be more liable to consumption than the miner. In the North of England, Diseases of the heart are stated to be frequent amongst the latter in all the districts, and asthmatic complaints affect almost all from 30 to 40 years of age. This form of asthma is very commonly attended by a dark expectoration, giving a popular name to the affection in the North of England, where it is not very intractable. But the essential identity of the cause and nature of the malady, in all the collieries, seems to be rendered manifest by the observations made on its fully developed form in some parts of Scotland. The Pencilland Colliery, in East Lothian, has furnished the most marked examples of this black phthisis. It has been described by several medical men, especially Drs. Thomson, Allison, and Mackenzie. The ladies, who has written the recently and extensively published paper on this subject, has found that the lungs have been gradually invaded by carbonaceous matter, and at length in great part transformed into it; the symptoms progressing from such an amount of disorder as does not quite incapacitate for labour, to the most harassing cough, laborious breathing, and palpitations, and ultimately to the lowest degree of exhaustion. Dr. M., in one case, reduced the carbon expectorated to a beautiful black powder: the quantity was drachm and a-half daily, and in a week he collected nearly 2 *cos.*, and this went on at the same rate for several months. The disease is attributed to the accumulation of carbonaceous particles in the mines, increased by the small size of the workmen. The ladies, who has written the treatise, The adjoining Pencilland Colliery-Works, which are well ventilated, have always been free from this disease. We have here, in my judgment, but a magnified, and, therefore, conspicuous form of an evil which is, in many cases, equally the real, though it be minute, germ of consumption in our miners. Meagre as is this sketch, I must apologise for introducing here details to which nothing but the service of humanity can give propriety. That cause reminds me of the last subject on which I wish to touch. We were all gratified by the announcement that Sir C. Lemon intended to offer a premium for a full report on the results of the introduction of the man-engine at Trosaveen, and the United Mines. My present task commands me to allude to the subject of the man-engine, and, in the case of Trosaveen, the suggestion of Sir G. has been one of the surgeons to the mine in question, have kindly replied to some queries I troubled them with, respecting the frequency of accidents, the amount of disease, and the facility of labour in the deeper levels, since the adoption of the new method.

Dr. Barham proceeded to read these communications, which we are sorry to be unable to give in full. They all speak in the highest terms of the man-engine. "No man," says Capt. Jennings, "can tell the value of this engine, respecting the comfort and health of the men, and saving of the mine; the men can do full or third part more work for the same money." He mentions an instance of the resumption of underground labour by an old miner, who had been incapable of it four years prior to the new method. "I have enquired," he continues, "and cannot find one case of spitting of blood or consumption, brought on in these mines since the man-engine has been working;" and he proceeds to mention his own restoration from a very declining state of health, induced by climbing. The depth of this mine is 342 fms. Two boys have fallen off the platform through carelessness; no other accidents have happened; and the men have not been obliged to move only in 22 fms., instead of 12 times. In the United Mines, the man-engine has been only two years at work. Its influence, therefore, Capt. Francis states, only begins to be felt in the lessening of the number of persons receiving relief from the sick fund. This decrease has, however, been decided in the last eight months, and Capt. F. attributes it mainly to that machine; but, he considers, and no doubt justly, that the intense heat of the lower levels, obliging the miner to retire often during his hours of work, to the surface, in winter, has been the cause of the great number of extreme rheumatic cases, which prepares the way for disease. The statement made by Mr. G. Mitchell, is highly favourable. He writes thus:—"From my observation, I should say that pulmonary and cardiac diseases are certainly of less frequent occurrence than before the introduction of the man-engine." "The miner's powers of resisting disease are greatly increased; he can perform much more work than he could before; he returns home less fatigued, and is better able to resume his work on the following day." His opinion, confirmed by competent judges, is, that there has scarcely happened one month's rest of the miner from his employment by this man-engine, as was the case by the old system of climbing. The two boys mentioned above, and three slight cases at the United Mines, are all he has to record.

ACCIDENTS.

Dowlais Iron-Works.—Two men, J. Evans, D. George, and a boy, H. Jones, were suffocated in one of the ironstone pits, by a sudden influx of carbonic acid gas.

Penywaun Colliery, Hirwain, Merthyr.—E. Thomas was killed by a fall of rubbish.

Pontypool.—A quarryman, in the employ of Mr. R. Morrison, was most dangerously wounded by a stone, of nearly a ton weight, falling on him—he is, however, recovering.

Flowery Field Colliery, Stalybridge.—J. Wood was, unfortunately, killed by a fall of roof at Messrs. Ashton's.

Hurst Knoll Colliery, Ashton.—W. Spitt fell down the shaft at Messrs. Whittakers', and, we are sorry to say, was killed.

Knutton.—S. Lawton was killed by a quantity of stone falling upon him while working in an ironstone pit.

Blaina, Monmouthshire.—We regret to learn, that Thos. Deakin, aged 21, while working in the colliery, had his spine fractured by the falling of a quantity of earth and rubbish, after lying on about a fortnight, death put a period to his sufferings.

Rowley Regis.—J. Whittle was unfortunately killed by a fall of coal in Mr. Barr's colliery, at Haden Hill.

West Bromwich.—T. Roberts was killed by a fall of coal in Messrs. Bottley and Tinsley's colliery.

Billinge Higher End, near Manchester.—As two men were engaged at Mr. Stock's colliery, repairing some pump trees in the shaft a derangement of the machinery occurred, and they were thrown to the bottom of the pit. One of them, in his downward course, struck a scaffolding of 2-inch boards, and broke out a hole sufficiently large to let his body through; both the unfortunate fellows were killed on the spot.

Fatal Accident to the Underlooker of Messrs. Sowerbott's Collieries.—An accident has occurred at one of the pits belonging to Messrs. Sowerbott, Hindley-green, near Leigh, which has terminated in the death of the manager, Mr. John Potter. The deceased was going down the shaft of the pit, with one of the men, on Saturday morning last, for the purpose of examining the ventilating furnaces, when a screw-key, which, it is supposed, had been left in the head-gearing by one of the men, fell down the shaft, and fractured the skull of the deceased. The deceased became immediately insensible, and was conveyed home. Mr. Rowlinson, of Wigan, and Mr. Bridgecock, of Leigh, were speedily in attendance, and with Mr. Sowerbott, of Wigan, and Mr. Thorpe, of Manchester, rendered every assistance. At their efforts were unavailing—death terminated his sufferings on Monday afternoon last. The loss of this life is deeply regretted by all who knew him. Mr. Potter was an excellent teacher and had, by his own exertions, raised himself in society. He was an accomplished mathematician, and possessed a valuable library. He was one of the earliest promoters of the Leigh Mechanics' Institution, and was, for two or three years, an active promoter. The collieries, during his management, have been remarkably free from accidents, owing to his unremitting attention. He leaves a widow and six children to mourn his loss.—*Manchester Paper.*

Wigan—The Floods are the Coal Mines.—A suspension of labour at the pumping and winding engines has, we are sorry to say, taken place at several of the coal-pits, flooded by the breaking in of the River Douglas, and when active operations will be resumed we fear is uncertain. There is not that unanimity amongst the coal proprietors which is necessary for carrying on so great a work as the clearing of the mines will prove to be. What has been done up to the present time is a mere nothing; and unless some more energetic and more powerful means of clearing the mines and machinery are introduced, the day when the mines will be cleared must be pronounced very remote. The friends of the miners shut up by Messrs. Lancaster and Co.'s pit, are in a very distressed state, and there are great numbers totally out of employment, and entirely on the charity of their neighbours. — *Liverpool Mercury.*

The Crown mines in the Austrian dominions are said to have lately been so productive, that the cellars of the Treasury now contain 50,000,000 florins in gold and silver bars.

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 18 fm. level end, west of Slob shaft, is at present about 10 in. wide, with a small branch of lead in it, about 2 in. wide, looking more regular than last reported; the slopes in the back of the level, behind this end, are worth 8s. per fm.; the slopes in the bottom of level are also worth about 8s. per fm.; the slopes over Doyle's, in the back of the 18 fm. level, are improved, worth at present 20s. per fm. The 12 fm. level end west is at present producing stones of ore in a large lode; the lode in the winze, sinking in the bottom of the 12 fm. level (middle lode), is worth about 10s. per fm.; at the present depth of this winze we are rather doubtful if it lengthens. We have a cross-cut from the 18 fm. level, driving south, to communicate with the bottom of this winze, in a cross-cut south from the 12 fm. level, where the lode is taking off horizontally; it looks rather better than for some time past, worth about 8s. per fm.—Dec. 24.

BEDFORD UNITED.—At Wheel Marquis, the lode in the 90 fm. level, west of the sump winze, is much the same as when last reported; in the 90 fm. level east we have not yet cut the lode east of the cross-course. The lode in the 80 fm. level east is 2 ft. wide, producing stones of ore, and emitting a great quantity of water. The lode in the 70 fm. level east is about 2 ft. wide, and is much the same as when last reported. Hooper's winze, in the 80 fm. level, east of the engine-shaft, is now to the level of the 90, and we have commenced driving south to cut the south lode. In the cross-cut, south of the engine-shaft, in the 70, we have discovered a small branch; but, as we expect there is more lode ahead, we still continue to drive. The engine-shaft is down about 2 1/2 fms. under the 80 fm. level. The lode in the 25 fm. level, on the south lode, is much the same as described in our last week. The lode in the adit end, on this lode, is 2 ft. wide, producing stones of ore.—Dec. 28.

CALLINGTON.—The ground continues very soft for driving south to the east of the cross-course, in the 50 fm. level. In the 70 fm. level east, the lode is near 5 ft. big, and will produce 6 tons of ore per fm.; in the rise in the back of this level, we have a good ore lode come in the western end, 18 in. big, and will produce 2 1/2 tons per fm.; we expect the cross-course is very near this point. The rise in the back of the 100 fm. level has been holed to the 90, and we have commenced driving south; the lode is producing work of a moderate quality. No alteration has taken place in the 90, in the south or east. At the south mine, in the 125 south, the lode is 18 in. big, intermixed with silver-lead ores; in the north end, no lode has been taken down. In the 112 north, the lode is 10 in. wide—work of a moderate quality. In the 100 and 90 fm. levels, driving north, we are opening tribute ground.—Dec. 27.

CASCADE.—Since my last, we have passed through a vein of quartz, 2 in. wide, spotted with yellow copper ore, of good quality. I intend to open on this vein next week 3 or 4 ft., to see if it improves in size, then I will write you the particulars. The adit is progressing favourably—the cross-course is 1 ft. wide, composed of calcareous spar, muncie, and flookan. Our prospects are better as we get deeper in the hill. The vein we have cut is 22 fms. from the mouth of the adit.—Dec. 28.

COATLITHE HILLS.—No material alteration has taken place here since I last wrote. The men having been again employed in clearing the level east from A shaft, I hope to get on quicker in a short time, as, when we have cleared about a fathom further, there will be no stop to take up, the bottom of the old level being as low as the bottom of ours.—Dec. 27.

DEAN PRIOR AND BUCKFASTLEIGH.—I am much pleased with the appearance of the lode in the 20, west of engine-shaft; there is a decided improvement since my last visit to the mine, as I then anticipated, from the indications noticed in my last report; the lode is more than 3 ft. wide, and the north wall not yet opened—a regular leader, 1 ft. big, composed of spar, prian, &c., mixed with yellow copper ore, and apparently getting larger going west; there is also more water issuing from the lode than I have ever seen before—therefore, I think there is every chance, ere long, to meet with something very good, as the lode is precisely of the same character as in other parts of the level east, where it has been productive of great quantities of copper ore; the end is set to-day at 5 1/2 fms. per fm.; the engine-shaft is sunk 5 fms. 2 ft. 6 in. below the 20 fm. level, and set to sink 5 fms. deeper for 65s. by nine men; the ground is of a hard killas, and very clean from spar, of a blue colour; I perceive what was sunk above, by the former company, to be mixed with capels and spar, owing to a confused, or disordered, piece of lode opposite its intersection in the shaft—therefore, I am of opinion, agreeable to the dip of the lode above, there is every probability of a change for the better in depth on the intended level, now sinking to, which will be completed at an expense, bordering, as near as possible, to the estimate given; the pitch, in the back of the 20, is rather improved—the lode is large, and producing some very good copper ore. The 24 ft. wheel is erected, and the launders putting up. The drawing-machine and crusher will be attached with all possible dispatch. The pitwork is completed in a proper manner, and answering the intended purpose quite satisfactorily.—Dec. 27.—We have set the engine-shaft to sink to its intended depth—that is, 5 fms. deeper, before we cross-cut to the lode—price for sinking, 18s. per fm., by nine men. In the 20 fm. level, driving west, the lode is very much improved since my last report; the lode is large, and carrying a leader near the south wall, composed of spar and prian, and spotted with yellow ore—a promising level; and it is my opinion, from the present indications—that is, looking at the size and nature of the lode—that a greater improvement may be anticipated, and that the lode will be productive for ore; in the pitch, in the back of the level, the lode is about 3 ft. wide, producing some good stones of ore, of excellent quality. The carpenters are engaged about the necessary work for the drawing-machine, and fixing the launders, in order to take the water over the wheel, &c.—Dec. 28.

DEVON AND COURTENAY CONSOLS.—In our deep adit level the lode is 2 ft. wide, composed of spar, muncie, and killas, with occasional spots of ore. The ground in the cross-cut, driving north from engine-shaft, to intersect the lode, continues favourable. The men have nearly cut the plot, and will commence driving a level, 7 ft. high, and 4 ft. wide, in a day or two. I think the pitch on the north lode is not looking quite so well as last reported.—Dec. 28.

GALLOWAY.—During the week, our attention has been directed here to finding the underlay of the lodes, with a view to ascertain the best situation to sink the shaft. The weather has been exceedingly wet and stormy, so that but little progress could be made. We expect, however, to be able to commence the shaft by Tuesday next on the course of the east and west lode, and about 5 fms. west of the north and south one, as the latter lode is dipping that way; both lodes appear very large at the intersection, and very kindly.

GREAT MICHELL CONSOLS.—The lode in the sump winze is without material alteration, being 5 1/2 ft. wide, producing some good saving work, and promising improvement. In the 35 fm. level, west of the sump winze, the part of the lode being carried is 4 1/2 ft. wide, containing muncie and spar, with a small proportion of ore intermixed throughout—very promising.—Dec. 28.

HOLMBUSH.—The 132 fm. level is extended nearly 5 fms. south of the diagonal winze, and neither of the branches intersected that underlie through the shaft in that direction; the end is still in killas strata. In the 120 fm. level, south-west of the slide, we have intersected the caunter part of the lode, which was driven south by the slide; it is 10 in. wide, composed of spar, muncie, and spots of copper ore; from this point we have 4 fms. only to drive west to intersect the lead lode, which we have set to accomplish; the lode in the slopes, in the back of the 120 fm. level, east of the cross-course, is 18 in. wide, producing 2 1/2 tons of copper ore per fm. The rise above the 110 fm. level south, on the lead lode, is communicated to the 100 fm. level, thereby laying open a piece of tribute ground, and ventilating both levels; we shall resume driving the 110 fm. level south on the lead lode. The lode in the 100 fm. level south is 3 ft. wide, composed of quartz, and stones of rich silver-lead ore scattered throughout the lode; in this level we are paying particular attention in carrying, at least, 2 ft. of the country, or strata, on the eastern side of the lead lode, that we may not possibly miss the Flap-jack lode, the strata is a beautiful white killas; two of the lead pitches in the back of this level are producing good work, and the men making fair wages; the other pitch is not so productive at present. The lode in the 90 fm. level south is 2 ft. wide, composed of flookan and stones of lead.—December 28.

KIRKCUDBRIGHTSHIRE.—The lode in the 50 fm. level end is 3 1/2 feet wide, producing stones of ore—set to-day to six men, at 4s. per fm. The lode in the 40 fm. end is 4 ft. wide, producing 3 tons of lead per fm.—set to six men, at 4s. 4d. per fm.; the winze sinking under this level is in a hard lode, producing 1 ton of lead per fm.—set to six men, at 7s. per fm. The lode in the 30 fm. end west is 4 feet wide, producing 3 tons of lead per fm.—set to six men, at 3s. 10s. per fm. The 20 fm. end, having been holed to Keith's shaft, is discontinued, on account of the dip of the ground at surface going west. The lode in Keith's shaft is 4 ft. wide, and 1 yielding 1/2 a ton of lead per fm.—set to nine men to sink it to the 80 fm. level, at 7s. per fm.; each bargain has 20s. per ton for saving lead. The following pitches are also set—viz.: one in back of the 40 fm. level, at 3s. 10s. per ton; one in bottom of ditto, at 5s.; one in bottom of the 30 fm. level, at 4s.; and two ditto, at 4s. 10s.; one ditto, at 3s. 10s.; and one in bottom of the 20 fathom level, at 3s. 10s. per ton. On Monday last we shipped 38 tons 6 cwt. of lead per the Mary, for the Holywell market.—Dec. 24.

LEWIS.—The lode in the engine-shaft, sinking below the 60 fm. level, is 18 in. wide, yielding some tin, and very promising; the lode in the 60 fm. level end east is 2 ft. wide, worth 4s. per fm., and very kindly; the lode in the rise, in the back of the 60 fm. level, on south branch, is 1 ft. wide, worth 8s. per fm. The lode in the winze, sinking below the 50 fm. level, on south branch, is 18 inches wide, worth 11s. per fm.; we expect to have a communication through this winze in the 60 before the expiration of this year, immediately after which we shall resume the 60 end east and west from the said winze. Our tributers are working with spirit, and making fair wages at their different tributes.—Dec. 24.

POLSAITH CONSOLS.—I am informed the adit, at Trebetherick, was driven about 10 years since, which is extended on the course of the lode about

90 fms., varying in size from 9 in. to 4 ft. wide, with well-defined walls, and is composed of gossan, spar, flookan, and good stones of sulphuretted, and a little carbonate of lead; the lode is underlying west about 2 1/2 ft. in a fm.; and runs 30° east of north. The backs are chiefly taken away, as is also the bottom—about 50 fms. long, and from 3 to 8 fms. deep. Report says, there have been 1200s. worth of lead ore sold from this level, and that there is a good lode going down in several places, but not having the means to erect machinery to pump the water, it was abandoned. The slopes are full of water at present—consequently, I cannot vouch for the authenticity of this statement. The present company are sinking an engine-shaft about midway of this adit, which is about 10 fms. deep; they intend to sink 2 fms. more, and drive to the lode, which will take about two months from this time, and can be done without machinery, as the water is not so quick as was reported. This shaft is sinking in the country, which is expected to take the lode about 20 fms. under the adit. The country which the lode passes through, in this part of the mine, is a hardish slate. North of this adit, the lode takes an oblique direction, through Polsaith Valley, for about 160 fms., and then enters Tinner's Hill, which belongs to the same sett, where an adit is taken up, and driven, by the present company, on the course of the lode about 30 fms.; where it is from 3 to 8 ft. wide, composed chiefly of splendid gossan, muncie, hard and friable quartz, with large stones of lead ore imbedded in the gossan, which produces a quantity of carbonate and arseniate of lead. The ground, by the side of the lode, in this part of the mine, is a soft blue elvan, which is congenial for lead. There is an engine-shaft in course of sinking in the country (now about 8 fms. below adit), near the mouth of this adit, and it is expected that the lode will be seen here, in the 12 fm. level, in about three months. The engine now on the mine, but not yet erected, is intended to draw the water from both shafts; and from the water being so easy, the engineer considers it will pump all the water 40 fms. deep, which will give the mine a fair trial. In conclusion, I would beg to remark, that, although several of the mines in this district that have been partially tried, have not been worked to much profit, probably owing to bad management, and the lodes not fairly developed, and the prejudice that many people have against mines in this neighbourhood; I consider the lode in Polsaith to be of sufficient promise to warrant a reasonable outlay; and further, would particularly direct your attention to Tinner's Hill and the valley, where I have no doubt large deposits of ore will be found. I find the three stones I took to produce, by assay, as follows:—The stone of lead ore 80 per cent. for lead, but very little silver; the stone of gossan, 5 ozs. of silver to the ton; the stone of muncie, 25 ozs. of silver to the ton.—Dec. 14.

SOUTH FRIENDSHIP WHEEL ANN.—The ground in the 28 cross-cut south is still favourable for driving, and we are still intersecting branches of muncie, spotted with copper; the western side of the cross-course is more composed of fluor-spar and blue killas, which we account for as we are getting near the lode. Should the ground continue favourable, and the lode a regular underlay, we expect to cut it in about six weeks.—Dec. 28.

SOUTH WHEEL TRELAWEY.—In handing you my report of the above mine, in the first place, I beg to inform you, that the ground sunk through this month is not so much as in former months, in consequence of the shaftmen being employed some part of the time assisting pitmen in fixing lift, rods, stays, flogways, &c., and a balance-bob at surface, which work is now made all complete, and answers very well indeed; having finished the above work we can sink the engine-shaft without incurring any risk (comparatively speaking) to the lift or engine, and we hope, without lets or hindrances. The ground in the shaft is light blue killas, in some parts of which is often found spots of copper and muncie, and at present is so favourable, that we anticipate the shaftmen sinking from 4 fms. to 5 fms. next month; it is now sunk to the 21 fm. below the adit level; the quantity of water we have is just as it has been for some time past, barely 1 1/2 strokes per minute for the engine, which works remarkably steady.—Dec. 24.

TAMAR SILVER-LEAD.—The engine-shaft is sunk 11 fms. 4 ft. below the 160 fm. level, and we hope one month more will put it down to the 175. In the 160 fm. level south, the lode is 18 in. wide, composed of muncie and ore—saving work; in the same level north of the shaft, the lode is 2 ft. wide, producing good stones of ore. In the 145 end, the lode is 18 in. wide—very good saving work. In the 135 end, the lode is 2 ft. wide, composed of can and ore of coarse quality. The 125 end is suspended for the present, in consequence of so much work coming from the levels below. In the 115 end, the lode is 15 in. wide, composed of flookan and capel—discharging a quantity of water. At the north mine, in the 70 rise, the lode is 1 ft. wide, composed of can, muncie, and ore, coarse in quality. In the winze sinking in the bottom of the 60, on the eastern branch, the lode is 20 in. wide, with good stones of rich silver-lead ore. The steam-whim will commence working about the 9th of next month. We hope to sample on the 30th inst. about 90 tons of ore.

TAVY CONSOLS.—Our shaft continues to improve in sinking, and about the end of this week the sumpmen will have completed their bargain to sink 5 fms., when we shall begin to drive our 36 fm. level east and west on the course of the lode; from this level we may anticipate good returns; it will take near two months before we can begin to sink again. We sampled 72 tons dry ore on Thursday, the 24th, and would have had about 80 tons, had we not met with an accident, and broken the shaft of our grinder, which threw us back in our dressing. We have now from 40 to 50 tons of ore on the floors, and hope to have 100 tons for sale this month, as the weather is favourable. We cut the cross-course in the 24 fm. level yesterday, with very promising spots of lead in it, and shall know more about it in a few days.—Dec. 30.

TRELEIGH CONSOLS.—Christie's shaft, below the 110 fm. level, is sinking in the country. In the 110, east of ditto, the lode is 2 1/2 ft. wide, with a kindly appearance, but stones of ore only. In Gardens's shaft, below the 100, the lode is 3 ft. wide, rather kindly, with stones of ore. In the 100, west of ditto, the lode is about 20 inches wide, but little ore; the cross-cut south is stopped; in the 100, east of ditto, the lode is 18 in. wide, with stones of ore, not to value; it appears to be leaving the elvan. In the 90, west of ditto, the lode is 20 in. wide, producing good stones of ore; in the winze, below the 90 west, the lode is 2 1/2 ft. wide, worth 20s. per fm. In the 80, west of ditto, the lode is 2 1/2 ft. wide, ore throughout, but not to value. In the rise, above the 70 west, the lode is 20 in. wide, with a small quantity of ore. In the 60, west of ditto, the lode is 2 1/2 ft. wide, with stones of ore; the winze is stopped by an increase of water. Wheel Parent cross-cut north is driving in the country. In Lackett's shaft, below the 10, the lode is 1 ft. wide, with stones of ore. The engine-shaft, on Wheel Parent, and the whim-shaft, are suspended, having an increase of water, which cannot be drained to work them to advantage at present. Our water has very much increased of late through the mine, in consequence of the heavy rains.—Dec. 25.

WEST WHEEL JEWELL.—In the 57 fm. level, west of Williams's cross-course, on Wheel Jewell lode, the lode is 1 ft. wide, worth 3s. per fm. In the 42 fm. level, east of little cross-course, on the south lode, the lode is 1 ft. wide, looking more promising for ore than it was when last reported. In the 37 fm. level, west of Quarry shaft, on Tolcarne tin lode, we are driving south, in search of more lode. In the 20 fm. level, west of Quarry shaft, on the same lode, the lode is 1 ft. wide, worth 6s. per fm.; in the deep adit end, west of Quarry shaft, on the same lode, the lode is 15 in. wide, worth 10s. per fm.; in the shallow adit, west of Quarry shaft, on the same lode, the lode is 1 ft. wide, unproductive; in the slopes, in the bottom of the adit, east of Pryor's winze, on the same lode, the lode is 6 ft. wide, worth 45s. per fm. In the slopes, west of Pryor's winze, in the back of the 12 fm. level, on the same lode, the lode is 5 ft. wide, worth 30s. per fm. Trengoon's shaft is suspended, in consequence of a large increase of water. We hope the time will not be long before we shall be enabled to sink it again.—Dec. 27.

WEST WHEEL MARIA.—The eastern engine-shaft is down below the 38 fm. level 4 1/2 fms.; the lode in which is about 3 ft. wide, producing good stones of ore in places, and ground favourable for sinking. The ground in the cross-cut south, in the 54 fm. level, is much the same for driving as it has been for some time past, rather hard.—Dec. 28.

WHEEL ADAMS.—We have been engaged during the past week in stopping the eastern lode, between the 40 and 50 fm. levels, at which depth the flookan or superincumbent black clay has made an angle of 40° westerly—the lode having intersected it, dwindles to a mere thread, and is, consequently, unproductive; the ground, a few feet to the west of the clay, being of a more congenial character, we opened on it and found the quartzose lode about 3 ft. wide, worth 15s. per fm. We do not at present expect from the dip of this lode, and from the probable resumption of the former underlay of the flookan, that it will be affected by the clay as we develop it at a greater depth; but, to prove this, we propose to open the timbers in the 50, and, if necessary, to drive to cut the lode, which has either been lost sight of at this point, or it has never been discovered. This is an important feature in the concern—inasmuch, as the lode produces more silver in depth, as the results of our assays will show:—No. 1, from the 18 fm. level, produced 10 cwt. of lead and 9 ozs. 5 dwts. of silver in the ton of ore; No. 2, from the 28 fm. level, produced 10 cwt. 2 qrs. of lead and 16 ozs. of silver in the ton of ore; No. 3, from the 40 fm. level, produced 11 cwt. 1 qr. 14 lbs. of lead and 21 ozs. 10 dwts. 12 grs. of silver in a ton of ore; No. 4, from between the 40 and 50, produced 11 cwt. of lead and 26 ozs. of silver in a ton of ore. The eastern lode contains rather more silver in the shallow than it does in the deeper levels. There is no alteration worthy of notice in any other part of the mine. We shall sample, to-morrow, a parcel of silver-lead ore, computed 80 tons—samples of which will be immediately forwarded to the purchasers of lead ore. This parcel would have been got ready to offer for sale on the 24th, but for heavy rain, which fell for several days successively, and prevented our doing but little on the surface.

WHEEL SAMSON.—The men, for the last week, have been engaged in securing a run, or a crush of ground in the back of the level, a few fathoms from the present end, where the lode is about 4 ft. wide, with two smooth and regular walls; and by reason of the surface matter penetrating through the lode, it gave way, leaving both the walls in its proper position. The lode in the present end is from 5 to 6 ft. wide, carrying two regular walls, and is composed of large stones of fine grain yellow muncie, and rich gossan, with a great

deal of arsenic, spots of lead pyrites, and white iron—I should say a very kindly lode. We are now about 10 fms. from the junction, and, as we drive on, the lode increases in size. There is not a doubt on my mind, but what we shall discover such indications at the intersections, to encourage us to go down to high water-mark, so as to cut the lode about 60 fms. from surface without the least machinery, which, of course, is a great advantage. The north and south lode have been worked on for many fathoms in length—not more than 4 fms. from the sloping declivity of the cliff, where, I am given to understand, there have been hundreds of pounds worth of silver returned from a small branch. We have taken samples from the remains of this branch, and found it to be worth upwards of 150s. per ton for silver, and there is every reason to expect that the junction, in deeper levels, will produce large quantities of the like quality.—Dec. 28.

WHEEL TRELAWEY.—Phillips's shaft is still favourable for sinking. The lode in the 52 fm. level south is worth 15s. per fm.; this level north is worth 12s. per fm.; the slopes in the back of this level are looking very well. The 42 fm. level north is worth 11s. per fm., where the lode is large; the slopes here, and to the south of the shaft, are not, on the whole, looking so well as I have seen them, but are still producing a fair quantity of ore. The 32 fm. level north, and slopes in the back, are similar to last report. We are getting on with fixing the work in Trelawney shaft, preparatory to sinking as fast as possible. The ground is still rather hard in the 42 cross-cut west; as is, also, the 22 cross-cut east. We are stopping down a piece of ground at Vivian's, on the course of the lode, before commencing driving the 30 fm. level north, which is producing some very good ore. In consequence of the late wet season, and the impediment occasioned by this festival, we are not so forward in dressing the ore as I could wish, although we had a sufficient quantity at surface to sample this day, had it been dressed—consequently, I expect to sample about 75 tons on Thursday next. On Friday last, we again set the three bargains of halvans, for the lead only, at 5s. 4d., 7s., and 8s., in the 11, for 2 months.—Dec. 28.

WHEEL TRESCOLL.—Having had it intimated that the rich sample of tin ore sent to the office in London, could never have been taken from any regular lode, I have this week again sunk down on the back of it, which I was only enabled to do by having two men baling out the water—we having no pumps suitable for that purpose; two other men were then picked on to work, and, in two hours, raised 40 sacks of work—the average produce of which was over 1200 lbs. to the 100 sacks. It is now dressed, and, on Friday, it will be sent to the smelting works and sold. I estimate its value at 12s. Having now proved this rich deposit of tin to be a regular lode, about 4 ft. wide, I have only to say that, with the other two rich lodes, the three common lodes, and the 18 branches, this mine is open to challenge all the kingdom. I have been a tin miner and tin dresser all my life, and know nearly every good tin mine in Cornwall; but, as an infant mine, Wheel Trescoll surpasses everything I have ever yet seen.

FOREIGN MINES.

ALTEN MINES.—The following is the estimated produce for October:—

Mines.	Tons ore.	Per ct.	Tons copper.
Raipas	85	6	510
United Mines	30	6	180
Ripper's	20	6	120
Mancur's	10	5 1/2	65
Mitchell's	15	6	90
Old Mine	10	6	60
Powder House	4	5 1/2	22
Carl Johan's	2	8	16
Queen's	3	6	12
Church	3	6	18
New Lodes	2	6	12
Total	183		1095

Mining Report from October 27 to November 11.

Raipas.—The favourable prospects in the bottom and north-west workings on Labouchere's lode, continues equally flattering, although no further improvement can be noted. The sinking of Monk's shaft under the 10 fm. level has been commenced; and, at the depth of 3 or 4 fms., we expect to intersect Labouchere's lode, and the continuation of the bunch of ore discovered in the 10 fm. level, towards the north-west. Operations have also been resumed on Carr's lode, which can now be worked easier, and at less expense, since a direct communication has been formed with the surface through shaft No. 1. All the workings continue promising, and we still feel confident of being able to keep up the usual regular returns of ore throughout the winter.

United Mines.—Ward's lode continues to yield regular and good returns; but at Woodfall's, the produce has been rather fluctuating. Front Hoskins's lode, a small parcel of tolerably good ore has been returned, and the tributers have also risen some small parcels from the branches in other parts of the mine. Petherick's lode, and the old workings about Crowe's shaft, might also be worked advantageously on tribute; but, at present, the expense of draining this part of the mine would be too great for the limited means at our disposal, and must, in consequence, be postponed to some future time.

Ripper's.—The further exploration of the new lodes must be postponed until the spring of next year; and, in the meantime, the greater part of the workmen will be employed on tribute, for the purpose of keeping up the usual supply of ore to the smelting-house.

Mancur's.—The tributers have made fair returns. We are now drawing the water out of the old workings, and hope to resume these places in the course of this month.

Mitchell's.—The unusual mild weather at this season, enables us to continue a part of the surface operations, and we are now quite prepared to employ all the workpeople in the mine, as soon as the winter sets in. The prospects have undergone no material alteration since my last report.

Old Mine.—The workings at this mine are still favourable, and the tributers continue to work with advantage.

Powder House.—Both the prospects and returns equal our expectations, and continue favourable.

Carl Johan's.—Two men only are employed here on tribute; the returns are small, but profitable, and the ore is generally of a good quality.

Cole's.—The water is now drawn out of the old workings, and the tributers have this day commenced working on the lode, which at present is poor; the ore is, however, sufficient to pay the cost of working, and, at the same time, it provides a good fuel for the smelting-house.

Queen's.—The two men employed here are now engaged in returning the last month's produce of the new lode. We hope to be able to carry on the usual mining operations on a small scale throughout the winter.

New Lodes.—Hitherto the falls of snow have been very partial, and of short duration; and, notwithstanding the unusual boisterous weather, we have been enabled to keep on a great deal of surface work. Another new lode has been found, a short distance from the side of the first, below the old mine, and in a most convenient situation; it is between two and three feet wide, and contains good dredge ore. Two men are employed to explore it, by means of a level from the side of the mountain; and, from the prospects now in view, we have every reason to expect that it will immediately pay the cost of working, and ultimately be productive of profitable results. The prospects of the whole concern are very satisfactory. The workpeople are all extremely orderly and well contented, and the progress made by the works during the past summer will, I hope, prove conducive to the permanent welfare of our establishment.

Imperial Brazilian Mines.—Gold workings, from 1st Oct. to 22d Oct., 17 lbs 2 ozs. 11 dwts.—No letters by the packet.

NATIONAL BRAZILIAN MINES.—Cocies, Oct. 13.—On the eastern part of this layer, near the Cocies shaft, there is a large excavation made by the English in soft Jacutinga; but in the western side of the layer there is hard rock; and this line of ground, at the point of measurement at surface, is 11 fms. 2 ft. north, 27° east, from the collar of Hamilton's shaft; and would, according to the run of veins of other parts of the mine, pass more than 9 fms. to the north of the Caraco old shaft; for which reason we mentioned in last report, that a cross-cut should be driven from the latter towards the north, in order to ascertain if the veins were passed below us. The lode in Hitehins's slope, in ascending westerly from Terrell's winze, presents a favourable appearance, and we hope to meet with some favourable ground.

Cuba, Oct. 27.—Although the Quebra Cunha slopes must be abandoned as soon as the rains set, we have yet the open workings, which we have taken the liberty to name after our respected director, Mr. Collett, and from whence we have commenced taking away some stone already broken up. These slopes offer great facilities for excavating upon, and removing the stone when blasted; besides the advantages of being perfectly safe in all weathers, and, from the samples spoken of in my last reports, very productive.

Produce of 10 days' workings from Cocies—Montons 6 2 6 59; ditto, Cuba, 4 3 4 44—11 0 31 montons.

ST. JOHN DEL REY MINES.—Morro Velho, Oct. 8.—Produce for September—15,933 oitavas—153 259-1000ths lbs. Troy, from 3224 8-10ths tons of ore, equal to 4 79-1000ths cwt. per ton.—This splendid produce has, I acknowledge, taken me by surprise. In consequence of the accident to the Chert's lode last reported in my letter of the 8th Sept., I had fully prepared my own mind for a considerable diminution in the produce of Sept., and the decrease of 262 tons in the quantity of ore submitted to the stamps in that month, would seem to have justified my fears. Yet, in the face of this fact, the result is a produce greater than we had ever before reached. The only explanation the reduction officers give is, that the ore in September was decidedly richer than in August—augmenting the standard from 4 23-1000ths oit. to 4 79-1000ths oit. per ton. On the other hand, Captain Treloar says this is impossible—that the ore in September was, as nearly as possible, from the same locality, and of the same relative value as the preceding month, and that the produce of the two months should, therefore, have been directly in proportion to the quantities stamped in each. As it is, we are all at fault as to the causes of this unexpected result, nor can I recommend the board to calculate on it as a precedent for future produce.

Produce, 15,933 oit. less duties, 7 per cent, 1117 ditto: net 14,836 oit. at 7s. 6d. £5563 10 0
Cost for September, Rs. 30,128 116, at 27 1/2d. 3420 15 11

Profit

Negro Force.—Hitherto, with the exception of one or two individual negroes, I have had no accession to the force I found here on my arrival—while, on the contrary, 10 have been removed. I have now a fair prospect of receiving, within a few days, 8 from Sabura; 20 from Cocies (vide my diary of 23d Sept.)—28 together; which reinforcement will be the more welcome, as we are now in what is considered the sickly season, and a number of our people are either in hospital or on the convalescent list.

New Works.—The principal force of the mechanics is still occupied on the new pumping engine, which will not be completed till towards the end of this month—if even then. They have, besides, in a very far advanced stage—extension of spalling-floor (a most important work); new pitwork, for Cachoeira Mine; 8 Timbuctoo houses, for blacks; a house for Mr. Buchwald. As soon as the new pumping-engine is at work (I hope, at the beginning of Nov.), I shall put a strong force of mechanics to prepare the new 30-head stamps.

The New Hospital.—From want of carpenters to make progress, prior to the rainy season (notwithstanding my strenuous efforts to augment their number), must, I fear, remain over till the beginning of the next dry season—say, till April next; nevertheless, we have made some way towards it—viz.: a new road from the mine, completed; 22,000 adobas made and packed on the ground, under tile roofs, to protect them from the rain—each adoba weighing 33 to 36 lbs; the ground nearly levelled for the workmen; a number of pits dug, for the uprights of the roof; a water-course, of considerable length, for the supply of the hospital, completed; timber for the building, now gradually being deposited on the ground, by means of the new road.

The New Axle.—For the Herring stamps, I hope also to be able to take in hand next month, after which will come, according as we can spare the mechanics, inclined planes and Goyen's carriages, at the Cachoeira sump shaft; additional amalgamation barrels; new wheel, for the amalgamation house.

Reduction Report.—In this rather lengthy document, Mr. Smyth endeavours to account for the apparent high value of the ore in the past month; but it appears to me that all he says would apply with equal force to August, and yet the ore in that month averaged 44 adobas of only 4 23-100ths; whilst, in Sept., it is estimated at 4 79-100ths oits. p. ton.

Oct. 28.—Gold extracted to date, 5533 oits., from 240 73-100ths cubic feet of sand = 22 98-100ths oits. per cubic foot. Stamps working, during 18 days, 68 63-100ths heads. The supply of stone is abundant, and every thing proceeding satisfactorily in the mine.

Oct. 28.—Gold extracted to date, 11,385 oits., from 508 21-100ths cubic feet of sand = 22 4-100ths oits. per cubic foot. Stamps working, during 28 days, 68 16-100ths heads. The supply of stone is abundant, and Mr. Smyth is enabled to pick it to a small extent, but as I find it far more profitable to employ the women in breaking, rather than in picking the stone, I do not permit any but the convalescent and weakly women to be engaged in picking. By this arrangement, and by sending every available hand to increase the force on the spalling floor, I expect we shall, this month, pass nearly 3800 tons of ore through the stamps—a quantity of which hitherto it was deemed impossible to stamp with our present stamping power; and, in truth, it would have been impossible, according to the old plan of spalling; but, in consequence of my having greatly increased the manual force, and the spalling floor, we have now the greater part of the stone broken very small on the floor—thus doing, by hand, a portion of the work, which the stamps would otherwise have had to do, and enabling them thereby to operate on a larger quantity.

New Pumping Engine.—Notwithstanding the most strenuous exertions to push forward this work, I fear it will take yet four or five days to get it fairly into operation, and then only for the Bahu and Gamba. The Cachoeira is not ready for it, nor are the rods, &c., necessary to connect it with that mine, yet in hand.

Western Exploration.—It is determined to resume this with vigour, by driving a level to the northward, from the point where the old champion lode was brought to an appearance; but the ground and footway at that point being very weak, it will be necessary, before the men begin to drive, to put in some fresh timber work, which will occupy yet eight or ten days.

EAST CROWDALE MINING COMPANY.

The annual general meeting of shareholders in this company was held at the offices, Winchester-house, Old Broad-street, on Wednesday, the 29th ult.

GEORGE THOMAS, Esq., in the chair.

Mr. COLE (the secretary), having read the notice convening the meeting, the CHAIRMAN read the minutes of the last meeting, which were confirmed, and the following are the main points of the

DIRECTORS' REPORT.

The committee have much pleasure in submitting their report, at this second annual meeting, as the highly satisfactory prospects justifying the anticipation of the property soon becoming very productive of copper and tin, and profitable to the proprietors.

Capt. Stephen Paul's annual report, dated 24th instant, is on the table, containing such clear information upon all the operations at the mine, and the prospects at the present period, that the committee deem it unnecessary to offer any lengthened remarks. The committee will, however, make a few explanatory observations, in reference to his last annual report. The engine-shaft, on the copper lode, was then reckoned to be sunk by this period to the 60 fm. level, at which depth it is proposed to intersect, by cross-cut, the main (or Crowdale) copper lode—the sole object in establishing the present company—which lode was so exceedingly profitable formerly, within two fields' distance. Almost immediately after the last meeting, the ground, which was then very fair for sinking, changed into an intensely hard spar, which continued for several fathoms, rendering the progress very slow. This hard bar of ground, which was met with in the engine-shaft, at about 25 fms. in depth, has, however, in the opinion of Capt. Paul, and other practical experts, explained the reason why the lode in the former working of East Crowdale (upwards of 30 years ago), which was productive down to between the 20 and 30 fm. level, then became unproductive, from this point, from this circumstance, what of pumping power, and capital, the former adventurers did not possess. After the engine-shaft had passed through this bed of spar, favourable kilns was met, and still continues, with strings of copper ore, proving the country to be alive for mineral, and indicating that the lode below will be found again of its former size and productive character. The shaft is now down 50 fms.; and, as the favourable nature of the ground admits of 3 to 4 fms. being sunk per month, the object originally in view—viz.: the cutting of the Crowdale lode, in the 60 fm. level—will, no doubt, be accomplished in four or five months from this time. In the progress of sinking the shaft, an unexpected discovery was made at about 42 fms. in depth, of a lode of much promise, said to have yielded large returns of good copper ore in the old Crowdale sett. This lode continued in the shaft for about 2 fms., and produced about 3 tons of ore, of strong character. This north lode has recently been again intersected by a cross-cut, in the 47 fm. level, and 7 fms. 3 ft. driven on its course east; a good pile of ore has been raised from this level, which bids fair to give improved returns. Within the last fortnight, Capt. Paul, having expectations of cutting a bunch of ore in a few fathoms, has commenced driving west, in the 47 fm. level, on the north lode, towards a cross-cut—in which direction, in the opinion of the best authorities in the district, the lode is likely to be the most productive.

The committee have now much satisfaction in alluding to the tin lodes in that part of the sett called Rix Hill, where Capt. Paul, in his last annual report, suggested some trials being made. The operations that have been carried on here during the year are:—An adit, which has been driven through the country 70 fms., and the north lode intersected; a shaft (Harris's), sunk on this lode 18 fms. from the surface; and a cross-cut driven from the adit level south, and intersected another lode. A few fathoms south, there is a lode yet to be cut. From the two already worked on, some very fine and rich tin stuff has been raised, which, for want of stamps has not been dressed; but, by washing some fair samples carefully, it is estimated to produce about 7 tons of black tin, worth about 45s. p. ton = 315s.; whilst the entire cost at Rix Hill has been about 400l. The shaft just alluded to was sunk because there were indications of tin being raised to meet the costs—which has been realised. Its position is, however, too near the boundary (being within about 10 fms. to the east of our limits), to render it advisable to continue it, now the almost certainty of a rich mine has been proved. A new main engine-shaft has, therefore, been commenced in the early part of this month, about the middle of the sett, about 90 fms. west of the first shaft. Here, again, the lode on which the shaft is being sunk proves to be rich and productive; and is now reported by the captain to be worth, at least, 60s. p. fm.

The recent reports of Capt. John Hitchens (a miner of considerable experience and reputation), and of Capt. James Carpenter (of the adjoining tin mine, called Wheal Arderton), have been published in the *Mining Journal*, and have been read, probably, by most of the shareholders. Both these reports are very encouraging as to the copper and tin lodes; and, considering that the productive character of the latter at the adit level, and a few fathoms below at Rix Hill, warrant the expectation of continuous returns, recommend the erection of the necessary machinery and stamps for processing the lodes in depth, and rendering the produce marketable. Capt. Stephen Paul, the zealous agent of the company, fully coincides in these recommendations; and the committee have, therefore, now under their consideration the best and most economical mode of carrying them into effect.

The accounts, which have been examined up to the 30th November, and signed by the auditors as correct, show a small balance against the company of 110s. 19s. 9d.—this, the committee hope, the ready response of the shareholders to the call, due 5th proximo, will enable them at once to liquidate, and to continue the punctual discharge of the future costs—a matter of much importance to the character and respectability of the undertaking, and, indeed, to the value of the property.

A fire in the engine-house unfortunately occurred, in the spring of the year; and, but for the great exertions of Capt. Paul, and others in our employ, the house and engine, &c., would, probably, have been destroyed, and the mine stopped. As it was, the injury sustained by the machinery and building entailed an extra cost of about 150s., and delayed the sinking of the shaft for a short period. The engine, &c., are now insured.

Mr. Dow and Mr. Hollingsworth, two of the committee, retire by rotation, according to the rules; the two who are to succeed them, Mr. Dow and Mr. Hollingsworth, however, only offers himself for re-election. In accordance with the notice, it remains for the meeting to elect two other committee, if they think it expedient.

The committee beg to add, that they have taken no remuneration since 31st Dec., 1846; and that they do not intend to do so, until the mine is profitable to the shareholders.

In conclusion, the committee venture to express their own satisfaction and confidence in the prospects of the mines, which now embrace three distinct points—the main Crowdale copper lode, the north copper lode, and the tin lodes at Rix Hill; and they hope that the year 1848 will afford a dividend to the proprietors, if the previous preliminary operations that remain to be completed, and for which a limited amount of capital is required, are carried out with spirit and energy.

He then read the following special report from Capt. Paul, the company's agent:

CAPTAIN PAUL'S REPORT.

The ground in our engine-shaft is a close blue killas, intermixed with small branches of spar—one of these branches, 3 in. wide, contains good work for copper ore, and underlying 1 ft. per fm., will drop into, or unite with, our main Crowdale lode, at about 90 fms. deep. The killas, through which we have sunk for a great number of fathoms, is impregnated with small branches of copper ore, clearly indicating that we are in a rich mineral country; and I do confidently expect, when we arrive in the 60 fm. level, you will be fairly and abundantly paid for your very spirited proceedings. This shaft has passed through the north lode, which has been cut in the 47 fm. level, from which we have broken a good pile of ore; although the lode at present does not look so good as it did, I have every reason to believe that we shall make good returns from this place. You will receive a box of ore from this level, which will speak for itself. On the tin lodes, at Rix Hill, there has been a very large quantity of ground explored, and lodes traced at the surface, through the whole length of the sett; and, in the present month, we have commenced a new shaft in a central part of the sett, and of the old mine's workings. This shaft is situated between two lodes—the north one is now in the shaft, and I am proud to give you some good news from this place; it is, without the least exaggeration, worth 60s. p. fm.; some that have seen it, value it at a much higher rate. I believe you may take this as a fair estimate. On the south lode, from Harris's shaft, we have a good bunch of tin going down in the bottom of this level, which we are now going to sink upon. We have now on surface upwards of 3000. worth of tin, and ground laid open, that will produce large quantities of tin, which is of no service, your having taken away, 5000 lbs. the proposed stamps be erected; when that is done, you will have a dividend—payable in tin. In conclusion, gentlemen, I beg to congratulate you on the very striking improvement which has taken place in your mine in the past year.

Recapitulation of labour done in the past year, and not including that done in the old mine, previous to the water being left in:—Engine-shaft sunk 25 fms.; 47 fm. level driven 7 fms. 3 ft.; adit level, at Rix Hill, 70 fms.; cross-cut south, driven 11 fms.; on south lode, 2 fms.; Harris's shaft, sunk 18 fms. 2 ft.; shaft on lead lode, 7 fms. 5 ft.; and driven south, 6 fms. 3 ft.; new engine-shaft, at Rix Hill, sunk 3 fms.

The following resolutions were then passed unanimously:—That the report and accounts be approved, and adopted.—That George Lewis Hollingsworth, Esq., be re-elected as one of the members of the committee.—That George Bowness Carr, Esq., and Thomas Harrison, Esq., be elected members of the committee.—That the best thanks of the meeting be given to the chairman and committee, for their attention to the interests of the proprietors.—The meeting then separated.

SOUTH WHEAL MARIA MINING COMPANY.

At a meeting of adventurers, held at the Guildhall, Tavistock, on the 28th December, pursuant to notice, the following resolutions were unanimously passed:—1. That the minutes of the last meeting be confirmed.—2. That the pursuer's accounts, showing a balance of 116l. against the company, having been audited, the same be approved and passed.—3. That the captain's report having been read, the same be received and adopted.—4. That the pursuer be authorised to adopt the most rigid means he may think proper, to enforce the immediate payment of all calls in arrears; or to sell the shares of defaulters, through the Stannary Court of Cornwall, to pay the same.—5. That a call of 10s. per share be made, to be paid, either to the pursuer or into the Tavistock Bank, on or before the 15th January next.—A managing committee and auditors were then appointed.

The following report from the mining captain was then read:—

Since our last meeting, the works have regularly progressed, and the cross-cut north of the shaft is now, I think, within four fathoms of our north lode. I expected to have seen the lode before this, which would have been the case, had not our works been a little obstructed by the inundation of the late floods, which affected in a similar way every mine in our neighbourhood of the Tamar. We are again regularly at work, and I think this lode will be cut in January next. Up to the time of our meeting in August last, we had driven 11 fathoms in the cross-cut, south of engine-shaft; shortly after which, we intersected No. 1 lode, south of shaft, two feet wide, underlying about two feet in a fathom north, which produced large and rich stones of copper ore. It being then ascertained that the caunter, cut so good in Wheal William's higher shaft, would run near our south end, it was decided to drive west on No. 1 lode, to cut this caunter, and then to drive on its course, to intersect our great south lode. To effect this, 11 fathoms have been driven west on No. 1 lode; but there being some doubt as to the supply of air round a turn so pointed and lengthy, we again resumed driving south from this end, and are, I presume, about three fathoms from the caunter. This caunter, in Wheal William's higher shaft, produces good copper and lead ores. In the slitting pits, in South Maria sett, it is from two to three feet wide, possessing a very promising appearance, and containing almost every thing a miner can wish for. On reaching this caunter from our present south end, in the 30, we intend still to drive on its course, to intersect the great south and two other lodes, yet unseen; and calculate, by the soft gossan and kindly appearance of this caunter on the back, to reach the three south lodes at much less expense, and sooner, than by driving through the country. The great and extreme south lode is, certainly, the master lode; and, considering its strength and size, together with the bunch of ore now in sight, gone down in the adit level, and the rich ore taken from the same on fixing the dam in the bed of the river, I hope I am not exaggerating when I say, most certainly our expectations from this lode alone may reasonably be great. As we are so near this, and other lodes yet unseen, it must be gratifying to the adventurers to learn, that I believe another 10s. will cut and, to some extent, prove the whole at the 2 ft. level, which being 30 fathoms from grass, at the foot of a hill, of about 35 fathoms back more, will give us a back of 65 fathoms, on reaching the great cross-course, or north and south lode, running across and near the summit of the hill.

[In presenting these resolutions to our distant shareholders, through your Journal, I congratulate them on the fact, that South Maria may still be said to be free of debt; for, though a balance of 116l. appears against the company, a sum adequate to meet this is due for arrears, to collect which the most active legal means will promptly be used. As we are on the eve of intersecting three of our most depending lodes, it will be unfair to the paying adventurers, to allow a few to remain in arrears with their calls, to see the result of this cut; for, in case the sight of these lodes equals our expectations, none will be more forward than such defaulters to put in their claims; but should we be disappointed in the cut of these lodes, we will have lost our best chance of having work done at the expense of others—a course which our committee will not allow to be pursued. I assure all distant adventurers, that I shall, as pursuer, use the same active indefatigable means for the future as in the past, to keep the mine free of debt, and collect the calls; and it is with pride I state, that my past exertions have met the approbation of all important and respectable shareholders, which I pledge myself shall not diminish, and hope, before this call is responded to, to be enabled to repeat, through your paper, that South Maria will be proved that which I always expected as the result of our labours would be—viz.: a rich mine.—JOHN SECCOMBE, Pursuer.]

CRADDOCK MOOR.—At a two-monthly meeting of adventurers, held at Liskeard, on the 22d Dec., the accounts were examined and passed, showing—By balance from last account, 58s. 11s.; call, 120s. = 178s. 11s.—Labour cost for Sept. and Oct., 110s. 6s. 10s.; materials, 50s. 6s. 8d. = 160s. 13s. 6d.: leaving balance in favour of adventurers, 17s. 17s. 6d.—The following report was then read:—“During the last two months we have sunk the shaft nearly 4 fms.; it is now 42 fms. deep; there is no material alteration in the lode, except that the various branches into which it was split at the time of the last report are now united, and form one lode; it is, however, small, being about 10 in. or 12 in. wide, composed of peach, fluor, spar, and black and yellow ore; the ore is not sufficient to save. I said in my last report that I expected it would take five months to reach the 45 fm. level; but I am glad to find that at our present rate of sinking we shall reach it within two months from this date; the present price for sinking is 24s. 10s. per fm.”

GONAMENA.—At a two-monthly meeting of adventurers, held at Liskeard, on the 22d Dec., the accounts were examined and passed, showing—By ore sold, 247s. 3s. 2d.; calls, 256s.; balance from last account, 31s. 0s. 4d. = 506s. 3s. 6d.—Labour cost for Sept. and Oct., 802s. 14s. 3d.; materials, 113s. 0s. 9d.; dues, 15s. 11s. 2d. = 461s. 6s. 2d.: leaving balance in favour of adventurers, 44s. 17s. 4d.—A call of 11s. per share was made, and the following report read:—“The engine-shaft is sunk 8 fms. under the 45 fm. level; it is sinking for 20s. per fm., by nine men; part of the lode is come into the shaft, and we shall soon be able to sink on the course of the lode. In the east end, in the 45, the lode is 4 ft. big, composed of capel, mundic, and some ore; the end is driven to within 6 fms. of where the winze will come down, where we rose the ore above; the west end, in the 45, is in 20 fms. from shaft, and is 18 in. big, composed of capel, flookan, and spots of ore; we have not seen ore before in this level. The east end, in the 34, is in near 60 fms. from shaft; the lode is 18 in. big, composed of capel, mundic, and ore; this end is looking very promising, with good stones of ore; the pitch in the bottom of this level (34) is looking very well, and is set for 5s. 6d. in the 17.”

GWINEAR CONSOLS.—At a meeting of shareholders, held at the offices of the company, Three King's-court, Lombard-street, on Thursday, the 16th Dec.—R. R. MITCHELL, Esq., in the chair—the following statement of accounts was presented:—To cost for Sept. and Oct., 325s. 7s. 2d.; engineer, 18s. 18s.; merchants' bills, 201s. 2s. = 545s. 7s. 2d.—By ore sold, 293s. 18s.; call on 256 shares (21s.), 20th Sept., 512s. = 805s. 18s.—balance loss end of Aug., 626s. 9s. 1d.—leaving, 179s. 8s. 11d.—showing the total balance against the company to be 365s. 13s. 3d. The accounts having been examined and allowed, errors and omissions excepted, it was resolved—that a call of 2s. 10s. per 1-256th share be made and collected immediately, payable either to Mr. Tredennick, at the offices of the company, or to the pursuer, Mr. R. R. Mitchell, Marazion, Cornwall; and that Mr. N. W. Tredennick's appointment as engineer be confirmed, and that he be paid the usual salary.

WEST CARADON.—At a two-monthly meeting of adventurers, held at Liskeard, on the 22d Dec., the accounts were examined and passed, showing—By ore sold (less dues), 394s. 6s. 5d.; materials, 51s. 0s. 5d. = 399s. 7s. 10d.—Labour cost for Sept. and Oct., 2698s. 7s. 10d.; materials, 981s. 15s. 6d. = 3680s. 3s. 4d.: leaving balance of profit, 317s. 2s. 6d.; to which add balance from last account, 1612s. 7s. 1d. = 1929s. 9s. 7d.; from which deduct dividend, 640s.; leaves balance in hand, as per cost-book, 1289s. 9s. 7d.—It having been deemed essential to take up 125 shares in the Liskeard and Caradon Railway, to get it completed, and the ore forwarded at a reduced rate, it was considered not advisable to declare a dividend, although the prospects of the mine were improving, and sales likely to increase.

WHEAL BLENCOWE.—A quarterly meeting of adventurers was held at the mine, on the 21st Dec., when the accounts were examined and passed, showing—Balance from last account, 391s. 12s. 1d.; costs for Sept., Oct., and Nov., 427s. 8s. 10d.; merchants' bills, 66s. 19s. 4d. = 886s. 0s. 3d.—By ore sold, 304s. 19s. 8d.; sundries, 2s. 12s.; calls, 396s. 18s. 7d. = 704s. 10s. 3d.: leaving balance against adventurers of 181s. 10s.—A call of 15s. per share was made; the pursuer was authorised to take legal proceedings against all persons in arrears of calls, and the following report was read:—“Immediately after the last meeting, we resumed the workings in the 30 fm. level, and had not driven more than 7 fms., when we fell in either with Blencowe lode, or a branch of it, which we prepared to open upon; but just as we commenced to do so, the heavy rains caused such an increase of water in that level, that we were obliged to suspend operations there. We then put the summen to sink a winze from the 10 to the 20 fm. level, near the cross-course, and we have the lode at that place, about 2 ft. big, containing good work. The stopes throughout the mine are looking quite as well now as at the last meeting. We have now opened about 25 fms. on the east and west lode nearest the new shaft, and throughout the whole distance it has been very regular, and produced fair work. This lode is altogether of a very promising character, and the ground around it is so favourable, that it can be driven for 18s. per fm. The underlay of this lode is about 3 ft. in a fm., and the probability is, that it will form a junction with the more northern east and west lode, at the depth of about 20 fms., where we may hope to have something valuable. We shall immediately adopt means for draining the bottom (30 fm.) level, and hope, in the course of a few days, to recommence opening on the lode, or branch, discovered there, and then proceed in our main object—that of driving, to cut the east and west lodes at that depth. The outlay required, beyond the produce from the sales of tin, which we may expect to have, will not be great, to prove the mine at that depth; and we have every reason to believe, that the result will be favourable to the shareholders.”

WHEAL MARY CONSOLS.—At a two-monthly meeting of adventurers, held at Liskeard, on the 22d Dec., the accounts were examined and passed, showing—Labour cost for two months, 1306s. 16s. 3d.; materials, 584s. 6s. 4d.; dues, 78s. 18s. 10d. = 1969s. 1s. 5d.—By copper ore sold, 254s. 7s. 8d.; tin ditto, 1058s. 13s. 8d.; materials sold, 88s. 8s. 7d.; balance of last account, 193s. 12s. = 1590s. 1s. 11d.: leaving balance against adventurers of 374s. 19s. 6d.—A call of 2s. per share was made, and the following report read:—“Since the last report, we have fixed flat-rods and lifts, and sunk 4 fms. on the old lode in the bottom of the 80, west of engine-shaft; the lode here is about 2 ft. wide, of a promising character, and yielding both tin and copper. In the 50 fm. level, on the south copper lode, we have extended 25 fms. through ore ground, which we have set on tribute at 8s. and 10s. in the 17; the lode in the end is now large, but poor; this lode, in the 25 east, from count-house shaft, is also large

and spotted with ore. Our operations on the tin lode have been much retarded, in consequence of a great increase of water, by which means our best pitches are and have been for some time under water; but we hope to be able to resume them soon, as the whole of the water is surface water, and we are bringing in as hollow level to draw it off and prevent its going down. We have, however, sunk the shaft 6 fms. below the 35 fm. level, and extended the 35 fm. level 8 fms. west; in this end the lode is about 2 ft. wide—1 ft. of which yields good quality tinstuff; there are three pitches set in the back of this level at 4s. in the 12 each. The 25 fm. level on this lode has been extended east 6 fms., and yields fair quality tinstuff. There are two pitches in the back of this level working at 4s. and 12s. in the 17. We have one pitch in the back of the 14, on this lode, working at 13s. 4d. The north lode has not yet been reached by the 70 cross-cut; nor has the tin lode been reached by the 25 cross-cut south, where we shall see it 100 fms. west of the present workings, and 9 fms. deeper; but we expect to do both in a very short time. Our sales of tin have been lessened during the last two months by the water being in at the tin lodes as before mentioned; and for the same reason we cannot calculate our next month's sales with any certainty, but expect it will be 20 to 24 tons. We have increased our stamping power and other conveniences for the return of our tin; but, when we can get at the lode, shall still be raising tinstuff faster than we shall be able to stamp it. We sell about 50 tons of copper ore on the 30th inst.”

WHEAL SISTERS.—At a two-monthly meeting of adventurers, held at Liskeard, on the 22d Dec., the accounts were examined and passed, showing—By balance from last account, 18s. 2s. 7d.; copper ore sold, 720s. 9s. 8d.; call, 256s. = 994s. 12s. 3d.—Labour cost for Sept. and Oct., 749s. 17s. 1d.; materials, 177s. 6s. 11d.; dues, 43s. 8s. 2d. = 970s. 12s. 2d.: leaving balance in favour of adventurers, 24s. 0s. 1d.—A call of 1s. per share was made.—The following report was read:—“The lode in the 60 end, west of the great cross-course, is now yielding about 2 tons of good quality ore per fm.; and we have a pitch working in the bottom of the 50, over this end, at 4s. in the 17; this pitch, in the past two months, has yielded 60 tons of ore, worth 6s. 5s. per ton; the lode in the winze, sinking under the 60, is about 4 feet wide, composed of red priam, soft quartz, and a small portion of black and yellow ore, of a very encouraging appearance; there is a bunch of good quality tin at the top of this winze, but it does not hold down far. We have 31 men employed on tribute, and calculate that our next two months' sale of ore will be about 130 tons. The cross-cuts driving towards Wheal Mary tin lode are progressing satisfactorily, and we hope to reach it in both cross-cuts in about three months from this time.”

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

CARWINNING HILL MINE (in the parish of Dalry, Ayrshire, Scotland).—

This mine is situated about three miles north-east of the town of Dalry, and about a mile and a half north of the Glasgow and Ayrshire line of railway. Carwinning Hill is the first and beginning of a chain of hills, on the banks of the Clyde, running parallel to the great coal and ironstone formation, extending through the counties of Ayrshire and Lanarkshire. The chain of hills, of which Carwinning is the first to merge from the ironstone formation, being separated by a range of carboniferous or mountain limestone, is composed chiefly of schistose, or clay-slate, and commonly called killas in the mining districts of Cornwall. Until the year 1842, the black and clay-band ironstone was but little known, if at all, in the extensive parish of Dalry and Kilwinning; and the farmers had been making and repairing their roads with this ironstone. Since that period, most extensive operations in the production of pig-iron has been carried on—consequently, labour became abundant, and wages, owing to the scarcity of miners, ran above the average in many parts of England; therefore, a number of Cornish miners went to Scotland—many of whom had been employed in mines in which I had an interest; and the custom is with Cornishmen, wherever they are located, the first opportunity that offers to them, they set about an inspection of the district, one of whom, hearing of Carwinning Hill presenting features of a peculiar nature to the inhabitants, from the circumstance of the centre of the hill having the appearance of being stained with green paint, and vegetation not growing for a considerable distance, an early visit was the result. A communication was made to me, in the following words—viz.: “There is a hill, in the parish of Dalry, presenting the strongest features of a copper mine. I never saw a more kindly lode for copper in Cornwall; and I think it is worth your trouble to visit this country.” I immediately started, in the middle of last June, to survey the district, and, to my astonishment, I saw the strongest indications of a copper mine I ever saw so near the surface. I at once applied to the proprietor for a lease of the land, which I obtained; and put some men to sink a shaft on the lode—which was from 2 to 3 ft. wide, having regular walls; and appeared to be in a settled stratification. Since then, a level has been driven lower down the hill; and a second lode has been discovered, inclining towards the first—which will soon form a junction. Both lodes contain the grey sulphate of copper, as well as bell metal, and blistered copper, of the richest description—a sample of which was sent to the University, at Glasgow, to be analysed. The result of the assay, made by one of the first chemists, was 62.26 per cent. for copper. The greatest proportion of Carwinning Hill is composed of clay-slate, similar to the clay-slate in Anglesey, in which the celebrated Parys and Mona Mines were discovered, about the year 1780—which have yielded, since that period, several millions sterling value of copper ores; and several families have realised princely fortunes from the same. Carwinning Hill, being composed of clay-slate, is situated north of the mountain limestone, which runs in a parallel direction for some fathoms in thickness; then comes the great ironstone basin, or valley, where the black and clay-band ironstone is found, in the greatest abundance, a few feet only below the surface. Carwinning Hill presents to the geologist evidence of some extraordinary convulsion in Nature, and is highly volcanic—one portion of the hill having the appearance of lava, and also of slag from a black furnace, which furnish sufficient proof to the practical miner that, whatever mineral may be discovered, there will be found of the richest quality; and, from the existence of so much iron immediately contiguous to this highly mineral clay-slate formation—being precisely of the same character as the clay-slate in the great copper mining districts in Cornwall—it is fair to presume that Carwinning Hill will prove to be one of the greatest mines ever discovered in Europe, both as to the quantity and quality of its ores. The following are the results of different assays, made by Messrs. Johnson and Co., and others:—Grey sulphate of copper (Glasgow), 62.26 per cent.; bell metal copper (ditto), 27; grey sulphate of copper (London), 64; ditto, ditto, 61; ditto, ditto, 39 per cent., and 38 oz. of silver; ditto, ditto, 70 oz. of silver; bell metal copper (London), 39 per cent. of copper, and 36 oz. of silver; ditto, ditto, 37 of copper, and 27 oz. of silver.—A. BENNETT: Dec. 24.

SOUTH WHEAL BETSY.—This mine is situated in the parish of Mary Tavy, Devon, adjoining that well-known lead mine, Great Wheal Betsy. The sett is very extensive, being three-quarters of a mile from north to south, and half a mile from east and west, in which is inclosed the south part of Wheal Betsy sett, which has not been worked on but a few fms. under the adit. There is a deep adit driven from the Great Wheal Friendship Mine upwards of three-quarters of a mile, in order to unwater Wheal Betsy; but, in consequence of their bearing too far west, it is supposed they missed the lead lode to the south of the slide. We have about 26 fms. to drive to cut the lead lode, and have every reason to expect that we shall discover a good course of lead, which will leave backs of 27, or from that to 30 fms. from the bottom of the shallow adit, where there is a good course of lead gone down, inasmuch that it was worked, so far as they could go for water, on tribute. Since we have taken up the sett, there have been four men offering to take it on tribute, with all its inconveniences. I broke, with my own hands, good stones of lead from the back of the shallow adit, some of which is now in the office of H. Vatcher, Esq., Exeter. The lode varies in size from 2 to 4 ft. wide, great part of which is impregnated with lead, with a most splendid gossan on the footwall, and a branch (or leader) of blue flookan on the hanging wall, all of which indicates strongly for lead in the deeper level. The strata is a soft blue killas, with leaders (or droppers) of white iron, spotted with lead dipping towards the lode. I call it a very kindly lode indeed, and, according to its present appearance, I should think there could be no danger (if deeper levels were opened) of its being very productive, and amply reward the adventurers for their outlay. We are also in expectation of cutting a rich copper lode farther south, towards the Great Wheal Friendship; it appears, in driving the deep adit, they expected to cut it, but in consequence of their intersecting the slide, the ground was so soft, and their main object being to unwater the above mine, that they did not go to the expense of machinery at it. Since this has been done, which is but a few years since, there is a large corode of copper greens now to be seen in the side of the level, and the water is very powerful here, which indicates strongly that there must be a copper lode very high; we intend shortly to drive in search of it, and there is no doubt but that it will be a profitable discovery. We have a sufficient supply of water to work any necessary machinery—so as to prove the mine effectually. The men are now engaged in building blacksmiths' shop, changing house, &c., as well as clearing up a shaft that is holed to the shallow adit which was sollied over about 10 ft. from surface. We shall commence next week putting in a footway in carpenters' shaft—so as to commence driving to cut the lead lode, as well as the copper lode.

COMMUNICATION BETWEEN PASSENGERS AND GUARD ON RAILWAYS.—A correspondent (“A. A.”) calls our attention to the notice we gave, in last week's *Journal*, of Hunt's double whistle, and suggests that this alone would be useless, as it would be impossible for the guard to ascertain from which carriage the sound proceeded. He recommends a fan and lamp for day and night, to be raised by a handle inside—so that, on the whistle sounding, the guard may instantly recognise the carriage from which the signal is given. It might be so arranged, that the first motion of the whistle handle should exhibit the visible signal, by withdrawing a catch, and the lamp and fan could be made to rise with a spring.

THE COST-BOOK SYSTEM.

Sir,—Noticing the decision of Vice-Chancellor Wigram, in the case of *Curling v. Flight*, I am induced to make an observation upon it. I have often considered the mode of transferring mine shares is very deficient and unsatisfactory, although the same is properly entered in the cost-book; but it does happen sometimes, that no acknowledgment of this transfer is sent to the vendor. With respect to railway shares, they always issue a share certificate, and in case of transfer, the transfer deed is taken to the proper office, together with the share certificate, where the transfer is duly registered, and the deed retained at the office; and the share certificate of the same is also indorsed upon the back, as being transferred from A to B; or, as may be, with the date, by the secretary, and returned to the vendor. This mode of transfer appears to me to give a title most fully, because, upon the face of the share certificate, the name of the company is fully expressed; also, several particulars respecting it. As a mine adventurer, I have often thought this mode ought to be adopted, and I think it would be more satisfactory to adventurers generally, and also more advantageous to all concerned—therefore, I suggest the general adoption of this mode of registration by all established mining companies.

Gosnell-road, Dec. 31.

AN ADVENTURER.

PROTECTION OF MINING PROPERTY.

Sir,—I had much pleasure in perusing the article in your last week's Journal, headed "Association for the Protection of Mining Property," and heartily do I wish that association all possible support. Such an association will work well, and be truly beneficial by watching the receivers—for "where there are no receivers there will be no thieves;" and I feel assured, that the respectable founders, manufacturers, and tradesmen, will cheerfully aid the association, and thereby protect themselves against the unfair underseller, who is generally a receiver, and too frequently keeps himself safe; while the encouraged thief is punished, and his family, probably innocent, brought to disgrace and ruin. I hope this good example will induce the formation of a similar institution in the east, where, if possible, it is more required than in the west, as mine plunder is greater, and detection more difficult; and while police and others are watching what is taken off the mines, let there be known honesty and talent watching what comes into the mine—"he who does not break the law need not fear the judge."—MINER: *Banks of Tamar*, Dec. 29.

GREAT WHEAL MARTHA—"GEOLOGICUS"—CAPT. SPARGO.

Sir,—I observe that "Geologicus" has again troubled you with a lengthy communication on the Great Wheal Martha, being, on this occasion, an attempted justification of his own views in opposition to Capt. J. Spargo's, which appeared in your Journal some time since. Your correspondent has not yet learnt the truth of the proverb—"Vir sapit qui pauca loquitur"—and given some proof of his being possessed of a little degree of prudence, by preventing another exposure of the limited range of his mental faculties. I shall not occupy your space, Sir, in going through this additional specimen of the writer's ignorance of the use and meaning of the English language, as I am quite sure that the public require no assistance in forming an opinion between the statements of "Geologicus" and Capt. Spargo. The former evidently has some interest in endeavouring to defend the late management of this mine, and, therefore, it would be a pity to be too severe on one who is placed in so unenviable a position; he has, however, shown some little ingenuity in rendering his observations as unintelligible as possible, when he attempts to produce proofs of his views, while, in his deductions therefrom, he succeeds in making it understood that he considers the statements of Capt. Spargo to be "erroneous," and that he (Capt. Spargo) has assumed to give "information on subjects of which he knows nothing." I always admire those who, after long experience, and "hard labour and harder study," render themselves eminent in their profession; but I cannot but lament that there are some who, notwithstanding the very best advantages and opportunities, prove the little use they have made of them, and their inability to carry into practice what they once learnt from others. It is amusing to hear men, who write like "Geologicus," give such a description of themselves, and try to deceive the public into their views, by an account of their "knowledge of the more refined, but not less useful, branches of science, intimately connected with mining;" and, again, of "the rough paths having been made comparatively smooth by the kind, voluntary, assistance of English, German, and French professors." Was this intended to "smooth" the way for the unqualified reception of his following observations? Oh! the vanity and the self-delusion of human Nature! But "Geologicus" adds, they are "gentlemen whose names I should, if allowed, be proud to name." Have those gentlemen forbidden him to mention his connection with them, in acquiring any knowledge of mining? Let me entreat "Geologicus" to retain his silence for their sakes, and allow me to sign, as before, with regard to a personal knowledge, either of himself or Capt. Spargo—AMICUS-NEUTRO: Dec. 31.

BALESWIDEN.—At a two-monthly meeting of adventurers, held at the mine, on the 29th Dec., the accounts were examined and passed, showing—Amount for tin sold, 5521416s. 3d.; sundries, 8811s. 8d.—55592 17s. 6d.—By about cost, Sept. and Oct., 33332 1s. 0d.; merchants' bills, 11012 13s. 3d.; coals, 2207 17s. 6d.; carriage, 1087 16s. 9d.; dues, 1677 6s. 6d.—leaving balance in favour of adventurers of 6252 3s. 0d., from which deduct dividend, 4067, leaves balance carried to next account of 2195 3s. 0d.—The prospects of the mine were stated to have considerably improved, especially in the 114 ft. level, where a valuable lode had been cut, and from which present appearances hold out cheering prospects to the adventurers.

EAST WHEAL ROSE.—A meeting of the adventurers in this concern took place at Farquharson's Hotel, Truro, on the 30th inst., when a dividend of 50% per share was declared, and the following accounts for September and October were passed:—By balance at last account, 22957 7s. 7d.; ore sold (less dues), 14721 0s. 3d.; Cargill's adventurers for water charges, &c., 4612 6s. 6d.; proportion of profit in Cargill, 12277 10s. 4d.; sale of flour, delivery, &c., 592 0s. 8d.; 18764 6s. 4d.—Costs, coal, and merchants' bills, 80177 3s. 6d.; taxes, and Stannary Court dues, 1667 11s. 5d.; discount on ore bills, 292 13s. 10d.; loss on sale of flour and rye, 1122 9s. 9d.; dividend of 50% per share, 64007 157367 4s. 6d.—Balance in favour of adventurers, 30287 0s. 10d.

NORTH POOL.—A meeting of adventurers took place at the mine, on Tuesday last, when the following accounts were passed, and a dividend of 22 10s. per share declared:—By balance at last account, 5407 13s. 1d.; ore sold (less dues), 34287 3s. 6d.—39684 16s. 7d.—To costs, &c., for Sept. and Oct., including steam-whim and boiler, 22387 12s. 10d.; dividend of 12% per share, 12507 34887 12s. 10d.—Balance in hand, 4807 3s. 9d.

Santiago de Chile papers to the 2d of October have been received; they announce, besides other projects of law, one which imposes the contribution of one real for every *marco* of silver, whether in coin or in bars, extracted from the departments of Copiapo and Vallenar, received by any of the entrances, whether by sea or by land, from the province of Atacama. Half of the impost would be exacted for 10 years only. The other half will be permanent, and is intended to meet the expense of the mineral police—the former being designed for the construction of a hospital at Copiapo, and for the endowment of a school of Vallenar, in the admission to both which a preference will be shown to individuals connected with the business of the mines. The product of each will be made applicable to the revenue of its department respectively. The republic was quite tranquil.

On Christmas-day, M. Talbot, one of the directors of the Marseilles to Avignon Railway, and some other gentlemen connected with the undertaking, made an experimental trip from Marseilles, through the tunnel of the Nerthe and St. Louis, and across the valley of the Aigalades to Arles. Everything passed off very satisfactorily, in the presence of a considerable number of spectators assembled along the line.

The *Surrey Standard* says, it would be possible, if it were desired, to go from Paris to Dieppe in three hours. First-class steamers would cross the Channel from Dieppe to Brighton or Newhaven in four and a half hours. From thence to London, one hour would suffice. To travel the distance which separates the coast from the capital of England, one hour—total, eight and a half hours.

GREAT WESTERN RAILWAY—NEW "MONSTER ENGINES."—It is stated, that orders have been issued by the Great Western Company, for the manufacture of 16 additional eight-wheeled engines, of the class to which the *Iron Duke* belongs. We believe that these engines will, however, be five or six tons lighter than the *Iron Duke*, which, we are informed, on good authority, weighs upwards of 36 tons when in working order.—*Railway Record*.

CRIMPLE VIADUCT—HARROGATE BRANCH OF THE YORK AND NORTH MIDLAND RAILWAY.—The closing of the last arch of this stupendous work was performed on Thursday, the 25th of December, amidst the cheers of the workmen, and in the presence of Messrs. Farrell and Sykes, the contractors. An idea of the extent of this viaduct may be formed from its dimensions. It is 1848 ft. long, 142 ft. high, and consists of 31 arches, each 50 ft. span. The first stone of the work was laid on the 29th of April, 1846—so that, in the short space of 20 months, an unparalleled amount of masonry, consisting of those massive piers and lofty arches, has been put together, under the superintendence of John Cass Birkenshaw, Esq., engineer to the York and North Midland Railway Company, and his assistant, Arthur Thackeray, Esq., of Harrogate.

CALEDONIAN RAILWAY.—We have been informed, on what we consider good authority, that Thursday, the 20th of January, is fixed for the opening of this important undertaking for general traffic.—*Caledonian Mercury*.

GREAT WESTERN RAILWAY—CHRISTMAS TRAFFIC.—During the Christmas week, the Great Western Company carried 23,000 parcels. The receipts for passengers at the Reading station, on Friday, Dec. 24, amounted to 1800.

NORTH WESTERN RAILWAY.—The directors of this railway announce that the calls have been so well met, that they will be enabled to press on the works with vigour, without calling upon the shareholders before March next. The directors are negotiating with the Midland Company for the purpose of effecting an arrangement for working the new railway when it is finished.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.	
Bank Stock, 9 per Cent., 186 7/8	Belgian Bonds, 4 1/2 per Cent., 89 1/2
3 per Cent. Reduced Ann., 85 1/2	Dutch, 3 1/2 per Cent., 55 1/2
3 per Cent. Consols Ann., 80 1/2	Brazilian, 5 per Cent., 80 1/2
3 per Cent. Ann., 80 1/2	Chilian, 6 per Cent., 78
Long Annuities, 84	Mexican, 5 per Cent., 18 1/2
India Stock, 104 per Cent., 104 1/2	Portuguese, 4 per Cent., 23 1/2
3 per Cent. Consols for Op., 85 1/2	Russian, 5 per Cent., 107
Exchequer Bills, 1000l. 3d., 9 12 pm.	

MINES.—The business of the week appears to have been confined principally to the completion of previous sales or contracts. Perhaps, at no season of the year, does holidays interfere so much with, or influence, the stock and share market, as the present period. Notwithstanding the absence of actual business, we find confidence restored—money more abundant—and a manifest desire to advance the interests of legitimate mining. We, therefore, anticipate the year 1848 will prove a memorable era; and, as we are the only organ or representative of this section of our national wealth and industry, we are fully determined to expose its abuses, and, at the same time, to exert our humble efforts in advancing its honourable and legitimate pursuit. To the active and speculating—to the cautious and investigating—we would recommend a careful perusal of an article on "Mining during the Year," in our present Number, and we feel assured, that whilst every encouragement is afforded for investment and speculation, the cautious and timid have advice for avoiding a reckless or too hasty an outlay of capital.

Shares in the following mines have been done this week—viz.: Devon Great Consols, Trelawney, Trehan, Herodsfot, Condurrow, Mary Ann, Carwinning, Plymouth Wheel Yeoland, Franco, &c.

We hear that Carwinning Hill shares have been in demand during the week; and business in them was done, yesterday, at an advanced price.

But little business appeared to have been transacted in foreign shares during the week—a few Bolanos, Imperial Brazilian, and Australians, have been done.

Letters have been received from the Alten Mines, which represent the works to be in a very satisfactory position.

Despatches by the Brazilian packet, *Crane*, have been received by the St. John del Rey Company, up to the 28th of Oct. The accounts furnish a decided improvement in the mines, showing a profit of 2142l. for the month of September. In addition to the arrival of specie previously announced, we find a box of gold from Sierra Leone, *ex Pearl*, and by the *Princess Royal*, from Hamburg, three casks of gold, consigned to order; and since our last, per the Royal Mail Steam-Packet Company's ship, *Trent*, arrived at Southampton on the 27th from the West Indies, £17,000, and 1707l. in silver bars.

RAILWAYS.—On Monday and Tuesday the railway share market was somewhat firmer than at the close of last week; and a little more business was doing. On Wednesday, prices were, again, not so firm, and the market generally dull. On Thursday, things took a decided change for the worse; and remained in a very dull state until the close of the market yesterday.

MEETINGS.—EDINBURGH AND GRANTON: special; to consider amalgamation with Edinburgh and Northern—decided in affirmative.—DERBYSHIRE, STAFFORDSHIRE, AND WORCESTERSHIRE: first ordinary meeting; the directors' report was referred to the auditors, and an adjourned meeting to take place, to lay the same before the directors.—BARRADOES: special meeting; it was decided to suspend operations until the present monetary pressure had ceased. It appeared that the entire expenditure had been 32167 9s. 6d.; and the balance, 2487 3s. 3d.

HULL, THURSDAY.—There is no change in the character of the market, which remains without animation. Transactions are, if possible, more limited than ever, in consequence of the holidays. The new year, we trust, will bring an improvement in prices.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgh. Rwy.	Present actual cost.	Price per share.	Div. 1847.	Div. 1846.
Arbroath and Forfar	15	£179,939	26	4 p.c.	£137
Chester and Birkenhead	15	706,793	38	—	680
Dublin and Drogheda	35	733,655	53 1/2	3 1/2	707
Dublin and Kingstown	7 1/2	473,282	—	7	613
Dundee, Perth, and Aberdeen	36 1/2	285,745	30	6	641
East Lancashire	24	1,307,490	—	—	835
Eastern Counties	202 1/2	7,698,370	15 1/2	5	2355
Eastern Union	43 1/2	979,926	45	—	1110
Edinburgh and Glasgow	50	8,007,214	75	6	3260
Edinburgh and Northern	29	933,207	16 1/2	—	581
Glasgow, Paisley, and Ayr	60 1/2	1,890,547	120 1/2	7	2005
Glasgow, Paisley, & Greenock	23	888,964	18 1/2	3	922
Gt. Southern & Western, Ireland	110 1/2	1,876,326	21	—	1990
Great Western	240 1/2	10,630,763	94	8	21367
Kendal and Windermere	10 1/2	147,001	23	—	100
Lancaster and Carlisle	70	1,291,913	34	—	1129
Lancashire and Yorkshire	92 1/2	6,807,214	75	7	8698
London and North Western	428	20,010,467	148	9	40386
London and Blackwall	1	1,146,289	43 1/2	—	722
London, Brighton, & South Coast	147	5,659,180	42	4	8057
London and South Western	186	5,836,132	52	9	8604
Londonderry and Enniskillen	14 1/2	160,013	24 1/2	—	108
Manchester, Sheffield, & Lincolnsh.	49 1/2	2,078,135	80	5	1998
Marquess and Carlisle	28	424,417	—	3	491
Midland Company	382	8,658,504	100	7	22976
Midland Great Western (Irish)	26 1/2	582,776	117	6	1698
Newcastle and Carlisle	65	1,184,080	78	9	2159
Norfolk	70 1/2	1,375,633	78	6	2090
North British	78	2,514,150	24 1/2	5	2090
Shrewsbury and Chester	17	591,158	21 1/2	—	527
South Devon	29	1,339,860	22	—	767
South-Eastern	157 1/2	6,398,218	29 1/2	6	7754
Taff Vale	38	785,607	—	5 1/2	1646
Whitehaven Junction	12	616,010	52	6	653
York, Newcastle, & Berwick	236 1/2	3,685,102	38 1/2	9	12327
York and North Midland	196	3,196,869	72 1/2	10	7908

FOREIGN RAILWAYS.

Amiens to Abbeville	28	573,338	—	4	1075
Antwerp to Ghent (three weeks)	31	—	—	—	1100
Belgian	—	—	24	—	54312
Dutch Rhineish	57 1/2	—	—	—	—
Northern of France	211	2,000,000	11 1/2	4	12795
Orleans to Bourges (Central)	70	—	—	—	2544
Orleans to Tours	72	600,000	—	5	3663
Paris and Orleans	82	2,611,730	46 1/2	12 1/2	8370
Paris and Rouen	83	2,082,916	34 1/2	9 1/2	5875
Rouen and Havre	59 1/2	—	19	4	2296
Strasbourg and Basle (monthly)	88	—	8 1/2	—	6382
West Flanders (ditto)	—	—	18	—	1381

Total earnings for last week, £157,706, being an increase of £24,406 over last year.

RAILWAY TRAFFIC FOR 1847.—It appears that the traffic on railways, in the United Kingdom, during the year 1847, amounts to about 8,950,000l.—being an increase over that of the preceding year of 1,285,000l., or nearly 17 per cent.—The aggregate length of railway over which the traffic was conveyed, in the first month of 1847, was about 2710 miles; and, in the last month of that year, about 3420 miles. Taking the average length of railway for the year at 3100 miles, it would give 2887 1/2 as the average traffic per mile per ann.

RAILWAY CALLS FOR JANUARY.—The amount called up during the present month amounts to 4,677,075l., the proportion on foreign lines being 211,590l.—being 1,500,000l. below that of January last, and is less than might, from recent signs, have been anticipated; it is still, however, 1,360,500l. above the monthly average of 1847.

RAILWAYS OPENED IN 1847.—The following is a list of the railways opened in 1847:—Aberdeen, 20 miles; Birkenhead, Lancashire, and Cheshire, 3 of a mile; Caledonian, 40 miles; Cockermouth and Worthington, 8 1/2 miles; Dublin and Drogheda (Howth branch), 3 1/2 miles; Dundee, Perth, and Aberdeen Junction, 20 1/2 miles; Edinburgh and Glasgow, 5 miles; Edinburgh and Northern, 29 miles; Eastern Counties, 26 1/2 miles; Eastern Union, 34 miles; Glasgow and Ayr, 13 miles; Great Southern and Western, 56 1/2 miles; Great Western, 35 miles; Kendal and Windermere, 10 1/2 miles; Lancashire and Yorkshire, 1 1/2 miles; Londonderry and Enniskillen, 15 miles; London and North-Western, 50 miles; London, Brighton, and South-Coast, 39 1/2 miles; London and South-Western, 83 miles; Manchester, Sheffield, and Lincolnshire, 2 miles; Midland, 31 miles; Midland Great Western (Irish), 36 miles; Norfolk, 23 miles; Shrewsbury and Chester, 6 miles; South-Eastern, 15 miles; South Devon, 8 1/2 miles; Taff Vale (Aberdare line), 10 miles; Whitehaven Junction, 12 miles; York, Newcastle and Berwick, 72 miles; and the York and North Midland, 48 miles. The aggregate length of new railway opened for traffic, in the United Kingdom, during the year 1847, appears to be 750 miles—of which 516 miles are in England, 127 miles in Scotland, and 108 miles in Ireland. It is estimated that there are now about 150 miles of railway, independent of the above, nearly ready to open for traffic. These companies have called up about 22,330,000l. during the year 1847.

LATEST CURRENT PRICES OF METALS.

LONDON, DECEMBER 31, 1847.		£ s. d.	£ s. d.	£ s. d.
IRON—Bar a. Wales	10 10 0	0 0 0	0 0 0	0 0 0
Do. London	10 10 0	0 0 0	0 0 0	0 0 0
Nail rods	10 10 0	0 0 0	0 0 0	0 0 0
Hoop (Staff.)	10 10 0	0 0 0	0 0 0	0 0 0
Sheet	10 10 0	0 0 0	0 0 0	0 0 0
Bars	10 10 0	0 0 0	0 0 0	0 0 0
Welsh cold-blast	4 0 0	0 0 0	0 0 0	0 0 0
foundry pig	4 0 0	0 0 0	0 0 0	0 0 0
Scotch pig 6, Clyde	0 0 0	0 0 0	0 0 0	0 0 0
Rails, average	7 0 0	0 0 0	0 0 0	0 0 0
Chairs	0 0 0	0 0 0	0 0 0	0 0 0
Russian, CCN	0 0 0	0 0 0	0 0 0	0 0 0
PSI	0 0 0	0 0 0	0 0 0	0 0 0
Gourieff	0 0 0	0 0 0	0 0 0	0 0 0
Archangel	0 0 0	0 0 0	0 0 0	0 0 0
Swedish, on the spot	0 0 0	0 0 0	0 0 0	0 0 0
Steel, fugt.	0 0 0	0 0 0	0 0 0	0 0 0
Do. kegs	0 0 0	0 0 0	0 0 0	0 0 0
Copper—Tie	0 0 0	0 0 0	0 0 0	0 0 0
Tough cake	0 0 0	0 0 0	0 0 0	0 0 0
Best selected	0 0 0	0 0 0	0 0 0	0 0 0
Ordin. sheets, lb.	0 0 0	0 0 0	0 0 0	0 0 0

a Discount 2 1/2 per cent. b Net cash. c Discount 2 1/2 per cent. d Ditto e In kegs and 4-in. f Discount 3 per cent. g Ditto 2 1/2 per cent. h Net cash in bond. i Discount 3 per cent. j Ditto 2 1/2 per cent. k Net cash m Discount 1 1/2 per cent. n Discount 1 1/2 per cent. o For home use it is 32d. per ton.

[FROM OUR CORRESPONDENTS.]

IRON.—Dullness still exists in all descriptions, and further decline of prices is expected—the demand for export is very limited.

COPPER, TIN, TIN-PLATES, and LEAD. may be reported precisely as in last week's *Mining Journal*. *Spelter* is somewhat firmer, the quotations being 20d. on the spot, and for arrival 10s. to 15s. lower.

GLASGOW, THURSDAY.—The business in pig-iron this week, as might be expected from this season of the year, has been very quiet. There have been one or two cheap sales, made by parties wanting immediate cash; but this has not affected the general price for cash against bill of lading, which, to-day, may be quoted at 46s. 6d. to 47s. for mixed numbers. A slight reduction is looked for next week—3000 tons having to be sold for cash. The stock in makers' hands, and in the yards, which at the end of last year was estimated at 140,000 tons, is now roughly calculated at 80,000 tons.

THE IRON TRADE.—We regret to state that our intelligence from the iron district is in the highest degree unsatisfactory. Pig-iron, which was sold last quarter for 47 1/2s., is now being offered at 34 10s. per ton; and it is generally understood that at the ensuing quarter-day a reduction of 2d. per ton will be declared. As we have already announced, various meetings of coal and ironmasters have been held, at which a very considerable reduction of the workmen's wages was resolved upon, and notice given at the various works to that effect. The men employed at Banks' Iron-Works, near Bilston, have, we understand, refused to accede to the reduction, and have turned out. The other notices have not yet expired, but there is reason to believe that the men, in various parts of the district, will submit to the unhappy circumstances which the ironmasters have sought to defer as long as possible. We are also sorry to state, that some compositions in the trade have taken place. Last evening (Wednesday) a numerous meeting of the creditors of Sharp, Brown, Burgess, and Morris, engaged in the iron and wire trade, was held at the Union Inn, in this town; they being present, amongst others, Mr. Foster, of Stourton Castle, Mr. W. Foster, Messrs. Brauer, Barrows, and Hall, Mr. Evers, Mr. Robinson, of Dudley, &c. Mr. Collis, solicitor, of Stourbridge, was in attendance for the principal creditors residing at Stourbridge, Brierly Hill, Dudley, &c. Mr. M. Stocks, of Halifax, attended on behalf of a bank of that place. It appeared, from the balance-sheet, that the bankrupt's debts amounted to 13,000l., of which 8000l. is due to the Halifax Bank, for which, however, they hold security to the extent of 3000l., their claim being thus reduced to 4000l. The amount due to Bradley and Co. is 7600l.; the residue stands divided amongst a large number of creditors. The assets were stated at 15,000l., and a composition of 9s. in the *l.* to be paid by four instalments, of three, six, nine, and twelve months, was offered. It was required that the two last instalments should be guaranteed, but the friends of the house, who reside in Scotland, having only consented to one guarantee, the further consideration of the business was postponed. Messrs. Sharp, Brown, and Co., have carried on an extensive trade in Halifax, which accounts for the bank claim from that town. About three years ago they commenced works in Fazeley-street, Birmingham, and continued there until their recent stoppage. Very few of our fellow-townsmen, we are glad to say, are sufferers by the failure.—*Birmingham Advertiser*.

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—Gold coin to Hamburgh, 1000 ounces. Silver bars to ditto, 6,620. Ditto, for British West Indies, £400.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars, per oz. £3 17 9 1/2 New dollars, per oz. £2 0 4 1/2 Portugal pieces, per oz. 0 0 0 Silver in bars (standard), per oz. 0 4 1 1/2

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Dec. 25, was 16,314; amount of money, £67 19s. 6d.

PRICE OF MATERIALS,

As charged at the Slieve Park Mines in the following months of 1847:—

DESCRIPTION.

there were suggestions from some of the witnesses who worked in the colliery, that had Mr. WIGHTMAN, the manager, paid better attention to the applications of the men, the accident would not have occurred. It was attempted to be shown, that a door was required in that part of the mine where the explosion took place—that Mr. WIGHTMAN's attention was called to it, but that its erection was delayed—and that, had it been put up in time, the explosion would not have occurred. Now, Mr. WIGHTMAN, in his evidence—and which was not contradicted by one of the many witnesses who followed—stated that none of the men ever expressed any apprehension of danger, or any dissatisfaction, as to the state of the works—that the door in question had since been put up—and that, on testing the heading with a DAVY lamp, he found the gas present in as great a quantity as before the accident—and that he did not believe that, if it had been put up sooner, the accident could have been prevented. The fact is—and we are sorry to find such is the case—that a great prejudice exists among the men against Mr. WIGHTMAN as manager—probably, from his having been a Newcastle collier, and the South Wales men wishing to have a view from among their own countrymen. To such a ridiculous extent is this carried, that the men in Messrs. BAILEY's pits have, since the inquest, struck work—and thus not only subjected themselves and families to misery and starvation during what ought to be a season of comfort, but placed the furnace-men, unwillingly on their part, in the same miserable situation as themselves. Mr. WIGHTMAN is a practical and highly-intelligent man, from whom we have received, on various occasions, many valuable communications on ventilation, which have been published in our columns; he has, we have understood, given satisfaction to Messrs. BAILEY, and is by no means prejudiced to any particular system as a general panacea, but endeavours to arrange his ventilation according to local circumstances. We trust the infuriated men will return to their employment, and, by being less reckless themselves, assist their manager in securing the general safety, and carrying on the works with facility and confidence.

In the *Gazette*, of Tuesday evening last, there are instructions, under the Royal sign manual, for altering and establishing the royalty on minerals raised in New Zealand, in such manner that in future they shall be 15 per cent. Now, we are not aware what was the previous amount of royalty, or if there was any; but it is evident that the fact of imposing burdens on the mineral productions of an infant colony, tends very far to damp the ardour of enterprise, and deter many an adventurer in England from lending his aid in the development of its character and riches. South Australia was, happily, free from such impost—hence the rapid extension of successful mining adventure; and, when Governor ROBE attempted, in the plenitude of power, and arrogance of office, to impose the tax on minerals on a similar footing with Cornwall, he raised a storm about his ears which he found it difficult to quell; the whole population were opposed to his *dictum*, and application was made to the Government at home against the obnoxious royalty; the reply to which, however, was not waited for, the Governor and Council finding it prudent to withdraw the illegal Act. The lands of New Zealand are held, it is true, on a very different tenure to those of South Australia; but we would simply urge, as a matter of policy, that if a royalty on the minerals of New Zealand is to be imposed, it should, in no case, be enforced until a definite period, say one year, after the workings are absolutely paying their expenses. This would encourage immigration and mining enterprise, tend to explorations into the interior, and go far to avert the unhappy differences now existing between the colonists and natives.

It is highly probable, that the war between America and Mexico, will be productive of much more important results than is generally anticipated. It is known, that there are, throughout Mexico, upwards of 3000 separate mines of the precious metals—principally silver, it is true, but inexhaustible, and, if worked with capital, spirit, and skill, it is estimated, might be made to produce at least quadruple what they ever did during their most flourishing periods. In addition to this, it may be naturally expected, that on the establishment of order, whatever party get the country, whether hereafter forming part of the United States, or not, numbers will flock into this fine territory on mining speculation, and, doubtless, many new deposits of mineral will be discovered. The power which the EMPEROR OF RUSSIA holds over the funds and commerce of Europe, from his possession of the largest and most productive gold deposits in the world, and the late large importation of bullion into England from different quarters, have set the American press on the alert, to give subject matter for that excitement, so acceptable to the Yankee character. Many a longing eye is turned towards that *El Dorado* of the western world; and nationally, it is highly probable, that the war was originally brought about from cupidity, and a desire, on the part of the Americans, to possess themselves of Mexico, and her precious metals. It has been already boasted by a New York writer, that these mines of wealth and power, which have fallen into the hands of the Anglo-Saxon, the war will be the means of opening to the world, increase the production of the precious metals, and annul the monopoly, which Russia has long possessed, through her gold mines. The silver, equal to 25,000,000 dols., which were raised annually just previous to the war, the writer asserts, could be quintupled, as one American is equal to four Mexicans in mining, and to half-a-dozen in fighting. This is Yankee boasting with a vengeance. Of the mineral riches of Mexico, there is no doubt—how far the Americans will prove themselves superior in their development, should they possess them, remains to be seen; but there are difficulties to overcome in that mountainous district, of which few, who have not obtained actual personal proof, can form no idea; and, although it is likely a great political and moral change will take place in Mexico, her mines are so locally situated, that they can never be worked with that economy, which marks the character of the English and American copper and lead mines.

Since writing the above, we have perused the speech of the American President to Congress, in which it is plainly asserted, that territorial indemnity for the expenses of the war—absolutely meaning, territorial aggrandisement—is, and ever was, the object of the United States; and it appears that General SCOTT has submitted his views in full to the President, and has suggested that the Government should hold the city of Mexico, and the other chief cities of the republic, take possession of the mines and public lands, and from them, as well as from other sources of revenue, to raise the means of paying the expenses of the war, and, at the same time, to occupy all the ports and seaboard, and collect the imports on all articles introduced into Mexico from foreign countries, until the expenses of the war are defrayed and an honourable peace concluded.

As a general proposition, it may be confidently affirmed, that the Australian colonies of England are not, in England, sufficiently appreciated. Considering the vast area they occupy, the genial climates beneath which they are stretched out, and the gushing fertility of the soil, they have claims of an extraordinary kind on the attention of the British Government, and to their cordial adoption by the British public. Grazing, and the elementary agricultural arts, are, at present, the bases of the industry of those interesting regions; but not a week passes, without exhibiting evidences of the utility of these noble colonies to make larger and more various contributions to the comfort and the wealth of the world. It is, how-

ever, principally to their mining capabilities that we wish, for a moment, to direct the attention of the mining public. Several large importations have recently come in, from the places in question, of both the useful and the precious metals; and, we understand, it is the opinion of the best judges, who have examined parts of the vast district with a view to mining, that the indications of rich and extensive metal deposits are numerous and striking. It must be remembered, that the situation of these lands is nearly antipodal to the parent state; and that, although by a chain of steam communication, which will shortly girdle the globe, they will be brought some thousands of miles nearer, yet their distance will greatly contribute to their permanent exclusion from the markets of the northern districts of Europe. They are, also, for all purposes of competition with the older states, exceedingly short of labour; nor, if labour was more abundant, does it appear to us that its absorption in mining would be its most natural, or its most profitable, destination. Want of labour is a want reaching to all the unassayed elements of a new country. Its first dedication should be, to supply the most pressing and prevalent wants of life; and we believe, that neither mining, nor mining produce, ever has been, or can be, classed with these. For these reasons, it is not likely that the colonies of Australia, north and south, can, under any circumstances, for a series of years, be our competitors in the ore markets of Europe. We shall rejoice in every encouragement given to its nascent industry, in whatever channel directed, and hope the eye of the imperial government will be constantly upon it for good. With respect to the amount of care and attention, which it is in the power of the Colonial Office to direct to this or to that particular dependency, we are bound to admit that, in particular cases, delays and omissions must needs arise. Considering the large circle of superintendence, and the immense details, which task the administrative diligence of that department of the Executive Government, we are rather surprised that more instances of apparent neglect do not present themselves. Those who wear the shoe, are likeliest to know the true character of its pinching. Beyond the sphere of office (too far beyond, alas!) we are apt to fall into the snare of the tavern politicians of Old Rome, who, sitting by the fire, pretended to know what was doing in the Capitol.

It is but a few hours since, that the first morning flag of 1848 was seen to flutter on the tip of the eastern horizon. We hasten to congratulate our friends in every place, on the advent of a new year, which will to them, we trust, be a period filled with all happiness and prosperity, both in their domestic and their public relations. It is, beyond all comparison, easier to become the historian of the past, than the prophet of the future. The qualifications for the first of these may be drank in at earthy fountains; but a higher, if not a heavenly, *afflatus* is necessary, to give substance and life to the character second in the order of enumeration. We make no pretension to either; it is more to our purpose to notice, for a moment, the existing circumstances under which, as a great working community, we are entering on the duties of an untried period. We have before intimated an opinion, that the repose which the commercial interests at large have now for some time enjoyed, will result in the repair and concentration of our public resources. We shall not have encountered the late hurricane for nothing; it will not have passed over us like the idle wind, which we regard not; the vessel will, at least, be kept in better sailing trim, and the crew more steadily looking out for storms. We are no less prepared, we think, than in our palmiest days, to run the race of commerce against the world, and have no diminished confidence whatever, that upon us will descend the chief honours of the contest. We fear, indeed, that the check given to general business in the summer and autumn months will show itself very distinctly in the revenue accounts for the quarter, which will soon be in the hands of the public; and we are apprehensive, also, that the suspension of railway works will, during this and the next month, tell very painfully on those branches of our industry—the iron trade, for instance, and the railway labour market—which were so materially fed by the large railway expenditure previously existing; but, these considerations excepted, there is nothing to impede our course—nothing to hinder our success—in prosecuting the peaceful interests of commerce and civilization throughout the habitable world. Let us keep in mind, and act upon the conviction, that the true wealth of nations is the industry of nations; and, of all the nations now living, we are, and must continue to be, the most diligent in the dedication of our faculties, to the laborious and the reproductive arts. The spectacle we must present to the world is, not a theory of melancholy figures, fettered to tasks they would fain leave undone, but dare not—that were rather one of the cartoons out of the *Inferno*, than a scene in merry England; but let us show ourselves a free, a fully occupied, a law-obeying community, all the classes of which are making the most of these circumstances, and upon whose countenances is traceable a cheerful earnestness for the increase and perpetuation of whatever makes life prosperous and honorable. To this a multitude of outward circumstances are at this moment contributing—a more liberal policy regulating the intercommunication of nations—a vast colonial empire, daily rising in importance as a market for our wrought produce, and proffering a rich and virgin soil for our young and adventurous population—a state of peace, profound in its degree, and universal in its extent—the foreign exchanges giving way before the enlarged stream of our exportations, and the bullion capital of our trading circles, placed in safe custody, and made accessible, by its abundance, to all who need it. We must not omit, from the rich inventory of our means, the great mining area of these islands—the iron and coal-fields of Great Britain—are of themselves an ample dowry for a first-class nation, to which, adding the teeming metallic deposits of Wales and Cornwall, we fill up another magnificent store-house of public wealth. It is in the application of our renewed energies to this branch of our home industry during the year, whose dawn has just opened upon us, that we look for some of the means of repairing the devastation with which we were recently overtaken. This is the class of duties—this is the particular vocation—which we take humble and earnest leave to commend to the care and patronage of those who know the value, and who have tested the benefits, of this particular and peculiar branch of English industry. Upon these points, collectively, we found our full confidence as to the progress of the year whose first morning has just risen upon us; and our readers may be assured that, throughout the period just spoken of, we shall use every exertion to enlarge the information, and increase the utility of, this paper.

With the commencement of the New Year, we resume the subject of the mineral resources of the Sister Isle, and the consideration of the course which should be taken, with a view of affording relief, not only from Christian motives, but with a regard to the channels through which such relief may be afforded, and that most effectively. Although many millions of money have been expended, within the past two years, in giving employment to the peasantry of Ireland, yet, if we look around us, how little real good has been effected. We do not find that the ports are improved—that bogs have been reclaimed—that any step has been taken to improve, or resuscitate, the fisheries; or, indeed, any one public work, which shall be, for the future, of public advantage. It is true, that a large portion of the expenditure has been applied to such as are designated "public works"—simply, we presume, because it was "public"

money which paid for the labour employed; and, while we fully agree with the Government in requiring labour in return for the aid afforded; yet, we regret to say, that the description of labour employed is such as to render its value insignificant, while many of the projected improvements are left in an unfinished state. The main object, to which it would seem the attention of the Government authorities was directed, was the improvement, or construction, of roads; and here, it would appear to us, that those in power were more than ordinarily short-sighted. It was said, we are aware, that, by improving the modes of communication, you afford to the farmer facilities for conveying his grain to market, and at once throw open the country; but, we would ask, did the commissioners, or those empowered, reflect for one moment that, while roads were being made, the farmers were lying idle, and that those who should have been employed in tilling the ground, were allowing it to go to rack and ruin, while they received the Parliamentary grant as the return for their labour on that which, we contend, is unproductive. The construction of railways seems to have been comparatively lost sight of, although such may be considered as being most conducive to the interests of Ireland—reducing time and distance, as well as the cost of carriage; and here was a wide field open, had the Government proceeded with that degree of prudence which they might naturally have been expected to exercise, with the many facts and evidence before them as regards the Sister Isle.

We are fully sensible of the many obstacles which present themselves in dealing with that favoured, yet unfortunate, country. We speak of it as favoured by Nature, but unfortunate from the schisms and divisions which exist; but we feel assured "that, had one-tenth of the money expended—aye, even one-twentieth part—been applied to purposes from which beneficial results might naturally have been looked forward to, we should, in a great measure, have been relieved from those further calls which present themselves, at the present moment, to every reflecting mind.

We have digressed from the ordinary course pursued by us, that of confining ourselves to the immediate question before us, and which ever presents itself. The desire we have of promoting the mining interests, whether of this country, of Ireland, or other parts of the world; but we have felt it a duty incumbent on us, ere we recur to the measure which we advanced some few weeks since, to say a word, *en passant*, on the Government measures of the past, sincerely trusting that the future will be of such a nature as will be hailed with that satisfaction on the part of the landlord and the tenant—indeed, all who feel an interest in the welfare of that country—as shall hold out brighter prospects for the future.

We have already stated in our columns, that we were well convinced, had but a portion of the money doled out to the Irish poor been applied to mining undertakings, that results highly satisfactory would have arisen, and a regular source of employment have been afforded; but, as our object, on the present occasion, is to direct the attention of Government and the authorities to the position of the mining districts at this moment, brought about by their want of foresight, we will leave for awhile the discussion of the advantages which might fairly have been calculated upon to have accrued from the working of the mines of Ireland. It will serve our purpose to confine our observations, on the present occasion, to the County Wicklow; and we will take the electoral division of Castle MacAdam—the mines to which we shall refer being situated in the Vale of Ovoca, and well known to our readers, we doubt not, from their frequent quotation in the *Swansea Ticketing Papers*. These comprise the Ballymurtagh Mine, belonging to the Wicklow Copper Mining Company; the Ballygahan Mine, of which Mr. Hodgson is, we believe, the sole or principal proprietor; the Cronebane and Tigrony Mines, the property of Messrs. Williams, of Scorrier; and the Connoree, which is held by a private party in London. The population dependant on these mines we may take at 5000 individuals, the actual number employed underground and at surface, as also in the carriage of ores, exceeding 1200, and whose families are dependant on their earnings, who are supported by their labour, and by the enterprise of the proprietors. It would be only natural to expect that, with this aid to parochial relief and to Government advances, every facility would be afforded to the adventurers, and that they would not be taxed for rendering the means of support to five thousand of their fellow-creatures—employing a large capital, and running those risks at all times attendant on mining pursuits; but what is the case? we really blush to tell it—the Poor Rates, as we are informed—and we have no reason to doubt the accuracy of the statement; for we have our information from parties who, as landlords, and acting on the magisterial bench, may be supposed to know—did not, for some three or four years antecedent to the sad visitation of the past two years, exceed 5d. in the 1l.; and, during the past 12 or 18 months, the gentry subscribed a sum—we believe 500l., or thereabouts—towards the relief of the poor: this, with the employment afforded, kept down the rate, which did not exceed 7d. in the 1l.; but the last made, some 10 days since, is *three shillings* in the 1l.; while the four mines we have quoted are rated at 55000l., or thereabouts, and, consequently, called upon to contribute 825l. per annum, and this taken from the pockets of those who are giving employment to the labouring poor, who, otherwise, must be thrown upon the parish, or the town lands, to find support, or to die.

As a slight evidence of the nature of the workings, and the extent of employment given, we may observe that, at the present moment, Cronebane and Tigrony produces from 1000 to 1200 tons a month, Connoree we suppose about 500 or 600, and we should imagine Ballymurtagh and Ballygahan, together, would give fully 2000 to 2500 tons—thus making, in the whole, full 5000 tons a month of sulphur ores. These require to be carried down to Arklow, or Wicklow, and there shipped; and yet, with all this encouragement, the mine adventurer, and the mine labourer, is mulcted to the tune of 3s. in the 1l., to support those in distress, whose cattle are *canted*, and ejected from their *homestead* by the absentee and middle man. We dare not trust ourselves to express our feelings—feelings which are the result of personal observation; but we trust we have said enough to excite the attention of those who possess power and influence, and sincerely do we hope that, on the next advance being made by Government, the state of the mining industry of Ireland will be duly considered, and that a helping hand will be lent to develop the mineral riches of that country, and not a further endeavour made to crush private enterprise.

REVISION OF FRENCH TARIFF.—The speech of the King of the French, delivered on Tuesday, on the opening of the Chamber for the ensuing session, has given general satisfaction, as his Majesty announced, that various alterations would be made in the tariff duties on the importations of foreign produce. The reduction of the impost on salt, one of the most grievous taxes which has for a long time been brought before the House, will be the means of developing that branch of mineral industry. Although nothing positive was stated as to what the Government intends doing with respect to the alteration in the next to prohibitory duties on British coal and iron, machinery, &c., it is evident, that there is an intention of making a beneficial change in the oppressive laws, that have hitherto existed, those articles, both from this country, Belgium, Sweden, and other parts. From the official returns it appears, that, notwithstanding the high duties, the importations of cast-iron and coal have greatly increased during the present year, and although the mining industry in France has been improving, they have not been able to meet the demands either for metal or fuel. The decrease in their maritime navy is one of the astounding facts, that the Minister of Commerce was obliged reluctantly to announce, and shows, that where prohibitory laws exist against the interchange with foreign countries, at low duties, their commerce must be annually on the decline. The present state of their steam navy is now under the special inspection of a scientific commission, and we are glad to see that the Duke de Montebello, the new Minister of Marine, has declared, that unless the oppressive duties on foreign iron and coals are reduced, neither their armed steamers or merchantmen will be able to compete with foreign countries. We have often alluded to the subject, and say, "better late than never," in reducing those duties on the mining industry of this kingdom, which will be beneficial to the commercial intercourse between us and our friendly neighbour.

A CONTRAST.—The imports of this country in 1803 were in amount, calculated at the official rates of valuation, 26,822,696l., and the exports 28,541,405l. In 1845, the imports were 85,281,958l. and the exports 150,877,902l.

THE MIXED GAUGES.—The *Gloucestershire Chronicle* says:—"We are glad to find that the new system between this city and Cheltenham is working most satisfactorily."

MINING DURING THE PAST YEAR.

Since it has been our duty to chronicle the progress of mining adventure, perhaps no year like the past has been so full of changes and fluctuations. The standard mines, it is true, have paid dividends that will compare with former years, and their prices have kept up equal with, if not better, than any other kind of investment; but, whilst the commercial world has been convulsed with misfortune and distress, and the ruin and disquiet caused by the failure of houses, hitherto supposed solvent and unexceptionable, have created want of confidence and distrust in all, no wonder that speculation for a time received a check, and that many of the younger mines fell beneath the influence of the storm. Upon the old mines, too, the low price of copper ore has had serious effect, more especially those which, from their great depth, are worked at a heavy and un-reducible cost. Perhaps, to explain this so as to be generally understood, we may repeat here a case we gave also last year:—Wheal A—, a deep mine, returning 1000 tons of ore per month, which, with a fair standard, realises 5*l.* per ton, or 5000*l.*—the cost of raising this is 4000*l.*, leaving a profit of 1000*l.* upon the month's working. Now comes the other side of the picture—the standard suddenly falls, the cost of getting 1000 tons of ore remains the same; but the ore will yield, owing to the fall, only 4*l.* per ton, or just sufficient to pay cost. In many mines the fall of the standard causes heavy losses. In a fair and legitimate manner, no one would be disposed to cavil at these fluctuations, knowing that markets will change, and prices vary under the influence of supply and demand; but what will our readers say, when they learn that, during the time the standard for ore was weekly falling, the price of the metal was advancing! And yet the smelters, who regulate all this, would have you believe that their trade is no monopoly, and that, being for the most part Cornishmen, they have the interest of "One and All" at heart! Their profits at all times are said to be enormous, and we must think a time of scarcity and commercial distress was but ill chosen to swell out already over-gorged coffers, at the expense of the working miner and the honest adventurer. With these few remarks, we shall turn from the subject, and open our budget for the year with the following table:—

LIST OF DIVIDENDS PAID IN BRITISH MINES IN TWELVE MONTHS, ENDING DEC. 30, 1847.

Mines.	Total dividends.	Div. per Sh.	Paid per Sh.	Market Val. p. Sh.
East Wheal Rose	£34,560	£270	15	£1300
Carn Brea	30,000	20	15	150
Devon Great Consols	15,360	120	214	1260
Wheal Seton	11,880	79	160	300
South Francis	7,920	60	5	400
South Caradon	7,680	60	10	250
Wheal Margaret	6,720	48	130	150
Trevelick and Barrier	5,910	25	300	350
United Mines*	2,500	18	63	4
Treleigh Consols	4,500	£19	20	100
West Caradon	4,860	24	900	1000
Par Consols*	3,072	19	14	25
Stray Park	4,000	3	19	35
Callington	3,060	35	1000	400
Great Consols	3,500	35	10	300
Wheal Friendship	2,560	20	280	125
North Roskear	2,450	12	10	90
East Crofty	1,880	12	10	200
Levant	1,280	10	5	15
Trevelick	1,200	10	5	26
Trelawne	1,280	10	45	500
North Pool	1,000	9	1	18
Balteswidden*	933	25	1	20
West Providence	704	10	75	75
Wheal Spearn*	700	4	29	20
Wheal Sisters	1,024	25	27	60
Wheal Vyvyan	388	3	5	30
Wheal Franco	388	1	5	20
Wheal Bal	120	1	5	30

Total dividends.....£155,381

The total amount of dividends paid, in 1846, in twenty-eight mines, was 158,838*l.* This year, it will be observed, in thirty mines, they amount to 155,381*l.*, showing, in the aggregate, a decrease of 3457*l.*; but when we take into consideration that Devonshire Great Consols, in 1846, paid 37,888*l.*, and in 1847 only 15,360*l.*, or less than half, the deficiency is more explained, and shows better results on the other mines in the list. In the case of Devon Consols, the falling off in profits declared may be explained by the fact, that the directors determined, taking into consideration the magnitude of the company's operations, upon having a large available fund, and which, we are informed, now amounts to nearly 20,000*l.* Up to this time, the principal returns have been made from Wheal Maria; but the other mines of the company in the same lode—viz.: Wheal Josiah, Wheal Fanny, and Wheal Anna Maria—are now yielding large quantities of ore. Wheal Josiah, we are told, a short time since, yielded 500 tons of ore from one pitch in a month. Of mines in the above list, which have never before paid dividends, and are consequently now coming into profitable working, are Treleigh Consols, Wheal Trehan, Wheal Sisters, Wheal Spearn, North Pool, and Wheal Franco. The Great Consols, under former management, paid about 300,000*l.* in dividends; but during 1845 and 1846, no profits were made—the present year, therefore, is the first of profitable results to the present company; and, unless the low standard has too great an effect upon them, profits may be looked for. Of Treleigh Consols, we may remark, they are worked by a scrip company, who have expended a large sum (6*l.* 10*s.* per 5000th share), and promise now to well reward them for their outlay. Trehan is a very promising lead mine, adjoining Trelawne, with a prospect of paying regular and steady dividends, although the mine only commenced working two years ago. North Pool is the great gun of the year—12 months since the shares were 40*l.* each, and have since reached 500*l.* each. The first dividend, 1000*l.*, was declared in November last. This mine and Trehan are two we predicted in our last year's summary as of great promise. Among the list, East Rose, Callington, and Trehan, are lead mines—Callington yielding also rich copper from one lode, worth about 40*l.* per fathom. Wheal Margaret, Balteswidden, West Providence, Wheal Spearn, and Wheal Bal, are worked for tin—whilst all the others are copper mines. The lead market, not being so much under the influence of the smelters, though labouring under the disadvantage of too small a capital, render the lead mines less liable to the depressing influence of the standard, and their profits may be calculated with more certainty.

The mines which paid dividends last year, but have not declared any profit this, are Tincroft, Trelawne, and Botallack. The first named is leaving a small profit, but labours under the evil of expensive management. Although paying nothing to the shareholders, the expenses of the London office are said to be nearly 500*l.* a year. Wheal Trelawne has been working to a profit of about 300*l.* per month; but large sums of money have been laid out during the year in new machinery, extension of set, &c. It is one of the most promising lead mines of the day, and, we understand, will recommence dividends in January or March next. Botallack has failed through poverty; but it is hoped may recover its former position. The ores are very rich, and often found in large deposits—five years since, the shares dropped to 100*l.* each, and in a few months, from a sudden improvement, reached 1000*l.*

The mines expended during the year, some of them holding out promise of success in 1846, are Trewollack, Ryalton, Rose Consols, Lanivet Consols, Tretoil, Wheal Gill, Caradon Consols, Wheal Norris, Wheal Concord, Wheal Walter, East Tamar, South Tamar, Wheal Agnes, &c.; it is only right, however, to remark, that some in this list have been brought to a sudden close on account of the pressure of the times, and the inability of large holders to meet their costs, and many may be resumed when the pressure ceases, and their affairs can be placed in a more satisfactory position.

The returns of profits, placed against the mines, marked with an asterisk, are made up only to the 30th of June last. The amount of dividends paid in the last six months, we have not been able to obtain, although more than one application was made to the manager on the subject. We regard this the most that public attention being now specially directed towards mining, there will be a want of confidence towards those concerns, where there exist objections, to furnishing information. The answer, that "such information is only given to shareholders," is one, we are happy to say, quite exploded in Cornwall; and we did not expect to find it given in London, in an office which, at least, claims to be a model of perfection, as it regards the management of mines.

factory position. The folly and infatuation of individuals holding share to a ridiculous extent beyond their resources, have been fearfully shown in some of the above; and those shareholders, who purchased for investment, and with a desire to pay up their proportions of cost to prove the mines, have been sacrificed to the stupidity, or cupidity, of a few. The affairs of Wheal Concord seem to be in lamentable confusion: it is, however, right to add, that it has never been supported by *mining men*; and looking at the manner in which it was formed, and by whom projected, its fate was long ago foretold. The same may be said of Wheal Walter, and others having the same origin. If the public will enter upon speculations brought out by inexperienced men, without due inquiry, and undertake the management of affairs totally beyond their comprehension, it is rather too much that they should charge their disappointment and losses to the legitimate chances of mining. We will venture to affirm, that the Wheal Consols, Wheal Walters, *et hoc genus*, have brought more discredit and disgrace upon Cornish mining, than years will efface. Those who have suffered by them were now to mining—they have been led away by misrepresentations, sacrificed by strange mismanagement, and they have lost their money and their confidence. But they ought to have known before, that good mines and good sets always find supporters in Cornwall, and are not generally brought to London for sale in the manner that these were.

In a review, purporting, more particularly, to give facts and figures regarding the transactions in mining during the year, it would, perhaps, be thought savouring of partiality, were we to hold up one or more mines as worthy of special notice either as speculations, or investments. Nevertheless, we cannot avoid remarking upon such as, from the best practical judgments, and the opinions of those most conversant in share dealing, that, for investments, such mines as Devon Great Consols, Trevelick and Barrier, Stray Park and Camborne Vein, Trehane, North Pool, South Francis, Carn Brea, and Wheal Seton, have been more in demand than others; whilst, as speculations, and such as are likely to have the greatest rise in price, are long, Condurrow, South Tolgus, Great Rough Tor Consols, Herodfoot, Wheal Tremayne, Trevean, Mary Ann, Heiginston Downs, Great Michell Consols, and Mendip Hills. As much discussion has arisen as to the real state of Heiginston Downs, we believe, to set the matter at rest, the present directors have had the mine thoroughly inspected; and the reports fully equal those made by the agents. We are told, 700 kibbles of the instuff at surface have yielded two tons of black tin, worth 40*l.* per ton—and this at an expense of 6*s.* 8*d.* in the 1*l.* The calculation is, that 27,000 kibbles of the like stuff are now lying at surface, besides great quantities broken in the different levels. The Mendip Hills Company have failed in their mining operations; but having obtained a large extent of slag ground (or the refuse of lead left by the ancient miners), they have, during the year, been opening it, and building smelting furnaces, railroads, launders, &c., for which repeated calls have been made. These, we are told, are now complete, and the smelting is to commence immediately. Considering the vast quantity of slag (said to yield 20 per cent. of lead) discovered, the company's prospects are most encouraging, and something beyond speculation. South Tolgus derives its chief attractions, not alone from having already a good lode discovered, but from being the adjoining mine to North Pool, which we have before named as being the great gun of the year. Trevean has been worked for 18 months as a tin mine; and, as such, has just paid her way. The shares, however, lately rose to a premium of upwards of 20*l.* per share, in consequence of a discovery that the gossan of a lode discovered, and of which a large quantity is already laid open, yields a large proportion of silver. Some of the samples assayed gave an average of more than 1000 ounces of silver per ton of gossan—whilst the produce of all the samples, had and good, would yield a return of 30*l.* per ton. Herodfoot is a rich mine, spoiled for want of efficient machinery. Had a call of 5*l.* per share been made six months since, and a steam drawing-whim erected, the shareholders would at the moment be in receipt of handsome dividends—the fear of a call has prevented this. The mine has a fine pumping steam-engine—whilst a water-wheel works a crusher for the lead, and draws all the stuff from the mine. But were this wheel constantly at work in drawing, it could not raise all the stuff broken in the mine; and yet, two or three hours a day, it has to cease drawing stuff to crush the lead for dressing. The consequence is, an accumulation of lead stuff in the mine, which ought to be raised and sold—whilst, on the contrary, it blocks up the levels, and prevents the men from working efficiently. Notwithstanding these great drawbacks, the mine is yielding 50 tons of lead per month, worth 12*l.* per ton, and could, with greater drawing power, return 70 tons. As these remarks are made founded upon the opinions of first-rate practical men, who have been down the mine, we hope they will induce the shareholders to erect at once the machinery required. Near to Herodfoot, a discovery of lead was made, at Herodscroft, which, in the early part of the year, created a great sensation, and shares reached 10*l.* premium upon 10*s.* paid. From an adit level, 400*l.* worth of lead were raised; and great confidence existed that the lode would also be found rich at a deeper level, and so make a lasting mine of it; but expectations were disappointed—the lode cut, about a month since, was poor, and, to the present time, has not shown the rich appearances of the adit. Great Rough Tor Consols is being worked in a most spirited manner by the largest proprietors in Devonshire Great Consols. Two perpendicular shafts are in course of sinking to cut the lode at 60 fms. deep; but a cross-cut will be driven at 40 fms. from surface, or 30 fms. below the shallow adit, to try the lode, which, near surface, presented appearances similar to the Great Maria lode. Wheal Mary Ann Lead Mine, adjoining Trelawne to the south, and on the same lode, is about paying the working cost, and is confidently expected, ere long, to pay profits, although 1000*l.* have to be paid to the lord of the mine before the shareholders can derive any benefit from them.

With regard to Ireland, although allowed by all to possess mineral in abundance, and facilities for mining operations equal to any other country, no progress seems to have been made in bringing its resources to market. The disturbed and distracted state of the country seems to shed its evil influence, not only over the land, but beneath it. It is a pity that such should be the case; the success of the Holyford Company should stimulate others to exertion. Of the Irish mines now at work, and belonging to London companies, the Barristown drags on its weary existence, paying its way to be sure, and finding in its levels enough to pay the salaries of officials; but, surely, more than this should be done by a mine returning 30 tons of lead per month, and capable, if reports are to be credited, of doing much more. The Kilbricken Mines—sold by the Crookfords to the present company for a large sum of money, upon representations which do not appear to have been borne out—nay, so far as they have gone, be pronounced a failure; whilst the statements afloat, in regard to them, do not, we are sorry to say, reflect much credit upon those who were instrumental in getting the shares to a premium. One of these, we are told, has altogether backed out of the concern. It would be interesting to the public to know—and we think they have a right to ask—how much Mrs. Crookford really received for her half of these mines. It is no secret, that the incoming adventurers were charged 5000*l.* The hon. Member for Bodmin being a director, can, perhaps, enlighten us upon these matters, although we will do him the justice to say, that we believe he has been more the deceived than the deceiver. The representations made by the directors, to induce the present company to pay such an enormous price for half the mine, were, if we are rightly informed, that only greater steam-power to drain the mine was required, to enable it to pay large and immediate profits; and that, when the water rose so as to stop the workings of the Crookford's, there was a very rich lode at the bottom.

We referred, last year, to the Cairnmore Mine, in Scotland, belonging to the Kirkcudbrightshire Mining Company in London, as likely to well repay the outlay upon it; and we can only now add, that, whilst the mine, for so young a concern, has been returning fair quantities of lead, the reckless and extravagant expenditure upon it have prevented the shareholders at present from reaping the profits they expected. This is to be the more regretted, inasmuch as it destroys confidence in mining out of the control of personal inspection. The mine is returning about 30 tons of lead per month, but which does not meet the cost. Arrangements, however, are in contemplation which will not only greatly reduce the expenditure, if carried out, but enable the returns to leave a profit. The Galway Mining Company—an offshoot of the Kirkcudbright Company—have a promising mine, and which can be proved at trifling expense. In other parts of Scotland, particularly in the neighbourhood of Ayr, large discoveries of copper have been made; indeed, the inhabitants, if we may believe all we have been told, have been so ignorant of the riches in their grasp, that they have for years, been building their fences with ore, yielding 7 per cent. of copper! This is to be worked by a private company at present—whilst the mines at Carwinning Hill have been brought out by a company in 2000 shares, and which already command a high premium on the Stock Exchange. They are, we are told, introduced under the auspice of the party connected with the Dutch-Rhenish; and the shares will, there-

fore, most probably rise in price. Whether the ultimate results will tend to strengthen the public confidence in mining, or not, time alone will show.

Of Australian mines, few, at present, have been profitable to the English capitalist. The Burra Burra, which has yielded returns almost equal to our Maria, is held chiefly by colonists, as are also the Kspunda, Montacute, &c. The Australian Mining Company, though they have spent 40,000*l.* in buying land, &c., and are calling for 10,000*l.* more, do not seem, at present, to possess any quantity of mineral discovered, though the prospects are said to be good. The last reports received from the colony, we believe, state that a lode, 15 in. wide, composed of grey carbonate of copper, has been found, and from which much is expected. Of English companies, the Barossa Range seems to hold out the greatest prospect of success; the outlay has been trifling, and the company are in possession of three mines—from one of which, the Greenock Creek, ore of a rich quality is said to have been discovered, and several tons raised. The other mines at Lynedoch Valley, and adjoining the Kaumanto, also hold out fair prospects.

In Wales, several mines have been taken during the year by London parties; and we have no doubt many more would have been brought forward, and have received favourable notice, had not commercial affairs thrown such a damper upon speculations. In other times, their prospects would not only have been commended, but warranted, favourable notice. Among the most prominent of the new concerns at work are the Dwrngwm and the Bwlch Cwmerfu.

FOREIGN MINES.—The dividends declared, but not yet paid, on foreign mines during the year, have been—

Per Share. Amount Paid.

St. John del Rey £3500 10*s.* £15

Alten £200 5*s.* 14*l.*

£6700

This list shows a falling off, as compared with 1846, of 36,393*l.* 10*s.* This arises chiefly from Cobre, Santiago, and United Mexican, not having divided any profits this year. The chief business in foreign shares has been in Real del Monte, Bolanos, United Mexican, Alten, Copiapo, Mocanbas and Cocacae, and St. John del Rey, although the prices are much lower than they were at this time last year. Del Montes have fallen from 4 to 1*½*, and Bolanos from 6*½* to 3*½*, chiefly owing to the disturbances in Mexico; but the best informed on the subject do not apprehend danger to mines the property of English subjects in whatever way these disturbances may terminate. We alluded, a year or two since, to a company, formed for working mines in Guatemala, under the name of "Chiantia." This has been broken up during the year, to the great disappointment of those who were led away by the over sanguine expectation of the projectors. We are not advocates for mining so far from home, where the shareholders are necessarily at the mercy of their agents, more especially, too, when so much ground remains unexplored in Cornwall and Devon.

In conclusion, although this article has run to much greater length than we anticipated, we cannot refrain from briefly remarking that, against evil report and good report—against the rage of railway speculation which, at one time, absorbed the attention of all—mine investments have worked their own way, until they have become an important feature in commercial transactions. Many of those who have so long been wedded to the prejudices against mining, have, through inquiry, become its supporters; and, so long as openness and candour exist among agents, economy and skill among managers, and confidence among all, we shall find the mining market extend until its operations will take the lead of legitimate speculations. Prince Albert has become a miner—the United Hills, Wheal Charles, and South Towan Mines, are now united under Royal patronage. Let us hope they will not only prove remunerative, but induce others to follow the example of his Royal Highness. We can only add, may the new year prove prosperous to "One and All."

PRODUCE OF THE PRINCIPAL CORNISH COPPER MINE FOR THE QUARTER ENDING DEC. 25, 1847.

Mines.	No. Ticketings.	Tons.	Amount.
Devon Great Consols	3	4193	£26300 11 6
Carn Brea	3	2831	1742 11 0
United Mines	3	3036	13460 0 6
Great Consols	3	2368	13261 7 6
Par Consols	6	1750	12647 3 6
Fowey Consols	6	1577	9200 17 0
Wheal Seton	3	1586	9065 0 6
Wheals Prosper and Friendship	5	1251	8162 3 6
North Pool	2	1682	7855 10 6
Wheal Trehan	3	1077	7217 18 6
East Wh. Crofty, Dudman, & Longclose	2	1336	7005 15 0
West Caradon	3	914	6100 7 6
Tincroft	3	1880	5521 4 6
South Wheal Francis	3	682	5347 5 0
North Roskear	1	924	5031 14 6
Trevelick	3	1036	4618 8 6
Stray Park and Camborne Vein	2	907	4078 16 0
Bedford United	3	358	3298 14 6
South Wheal Bassett	3	499	2045 17 0
Doleath	2	618	2664 7 6
United Hills and Wheal Sparrow	3	668	2630 9 6
Treleigh	3	448	2638 12 0
Trevelick and Barrier	2	436	2387 2 6
Perran St. George and Bolema	2	641	2362 12 6
Condurrow	2	454	1797 6 6
Wheal Tremayne	3	289	1782 17 0
Wheal Ellen	2	325	1667 15 6
Marke Valley	2	529	1858 9 6
Wheal Bucketts	3	362	1504 10 0
Grambler and St. Aubyn	2	372	1441 19 6
Poldice	1	255	1361 1 6
Levant	1	174	1275 1 6
Wheal Sisters	2	248	1199 14 6
Trevelick	2	370	1145 0 0
Lanivet Consols	2	276	1077 16 6
West Wheal Jewel	2	243	1079 0 0
North Wheal Bassett	3	168	1038 10 0
Wheal Agar	3	222	1053 5 6
South Roskear, Wh. Chance and Gerry	1	168	1013 12 0
Andrew and Nangles	3	172	998 18 0
East Pool	2	278	964 18 0
Holmbush	2	170	890 2 0
Creechbrays	1	180	789 4 0
Wheal Union	2	79	744 2 0
South Wheal Fortune	2	82	715 14 0
Wheal Jewel	1	119	638 16 0
Wheal Rodney and West Prosper	2	201	627 9 0
Wheal Comfort	1	247	625 4 0
West Wheal Treasury	1	91	500 3 0
Wheal Clifford	2	120	465 3 0
Great Work	1	40	427 16 0
Wheal Maldon	95	387	4 0
Wheal Virgin	1	73	382 15 0
South Tolgus	1	71	370 19 6
Gwnear Consols	1	143	321 9 0
Wheal Jane	2	102	310 0 0
Botallack	1	59	287 4 6
Wheal Mary Consols	1	46	241 10 0
Gonaenra	1	27	236 5 0
East Selton	2	44	228 10 0
Wheal Gorland	2	43	199 19 0
Wheal Prudence	2	88	185 8 0
Wheal Harriet	1	57	185 5 0
St. Ives Consols	1	23	163 6 0
East Relistian	1	42	162 15 0
Trenow Consols	2	34	143 4 0
Wheal Henry	1	30	135 10 0
Wheal Vyvyan	1	39	117 3 0
Wheal Feny	1	41	112 15 0
Spearn Moor	1	12	108 6 0
Wheal Ayr	1	20	104 10 0
Tokenbury	1	28	102 4 0
West Trellickan	1	51	100 14 6
West Bassett	1	20	94 0 0
Ying-Tang	2	35	99 12 6
Polgoth	1	10	79 12 0
Wheal Union	1	10	73 10 0
North Downs	1	16	69 4 0
Wheal Ruby	1	11	61 17 6
Trefoil	1	32	60 18 0
Wheal Unity Wood	1	11	58 17 0
St. Agnes Consols	1	7	48 6 0
St. Austell Consols	1	21	47 5 0
East Downs	1	7	42 14 0
Wheal Venture	1	5	37 10 0
Wheal Darlington	1	11	33 3 6
Copper Bottom	1	8	24 0 0
Hawkmoor	1	7	22 4 6
Wheal Buller	1	6	19 6 0
Wheal Rose	1	4	15 12 0
Wheal Ann	1	2	14 17 0
North Wheal Abraham	1	6	14 8 0
Wheal Tolgus	1	4	15 16 0
Pennbrook	1	1	10 17 6
Hanson Mines	1	8	10 12 0
Gonvrea	1	10	1 16 0

Total.....Tons 40949 £220,401 45 6

PROGRESS OF FRENCH MINING INDUSTRY.

(FROM OUR PARIS CORRESPONDENT.)

The speech, which Louis Philippe delivered yesterday, on opening the session of the French Chambers, contains one line, which falls within the domain of the *Mining Journal*—that which mentions that a bill, for effecting certain Customs reforms, is already before them. This, I presume, may be taken as a proof, that the Government means to proceed with the bill, notwithstanding the committee, to which it was referred, has reported against the most important provisions of it—that is, against those which abolish the duties on iron, copper, zinc, &c., for shipbuilding. If the Government do that, it will render a great service to the shipping interest in particular, and to the nation at large—to the former, by raising the mercantile navy from the deplorable state into which it has fallen—to the latter, by giving the first blow to the hateful monopoly of the iron-masters—a blow which will so shake their monopoly, that it will assuredly, sooner or later, crumble to pieces; for it will be impossible long to refuse cheap iron to railways, to manufactures, and to agriculture, when it is given to dockyards. Should the Government persist with this bill, I have not much doubt that it will be carried, notwithstanding the monopolists are extraordinarily strong in the Chamber; but to obtain success, the Government must be in earnest. It must be able to withstand bitter assaults from all sides, and all parties—it must even be prepared for the defection of some—nay, many—of those who are now its most devoted supporters. Can such sacrifices be expected from the present Cabinet? Let us hope that they may, especially as the public interest imperatively requires them. Whether, however, the Government be in earnest, or not, one thing is certain, that a stout battle will be delivered against the iron monopolists; and this alone will suffice to make the session one of very great interest to the class of which your *Journal* is the organ.

It is some time since any notice has been taken of the Great Coal Company of the Loire. The last you heard about it was, that an arrangement was in progress, for putting an end to its squabbles with the town of St. Etienne. The basis of the proposed arrangement was this:—1. That the company should be constituted into what is called a *société anonyme*, which is somewhat similar to a regularly-incorporated company in England. 2. That it should undertake, that the price of coal, throughout all the department of the Loire, should never exceed the average of the selling price of the company's coal in other departments, and that a reduction of 10 per cent. on this selling price should be made in favour of the town of St. Etienne, and of the district comprised within two kilometres of its *octroi*. This arrangement appeared satisfactory to both parties—to the company, by placing it on such a firm and regular basis, as should cause the public to place every confidence in it; and, at the same time, to afford full security to its shareholders—to the consumers of coal, by placing them out of the reach of any unjust exercise of the great power which the company possesses, from holding the greatest portion of the richest coal field of France. The Government, on its part, considered the arrangement perfectly satisfactory; and after several of the principal Ministers had had personal communications with the chiefs of some of the leading manufactures of St. Etienne, it was determined, in a Cabinet Council, that the company should be at once constituted into a *société anonyme*. The fact of a Cabinet Council having deliberated on this matter, will show to you the immense importance which is attached to the company in this country. As regards the Government, the thing may be considered at an end—it consents to the company being turned into a *société anonyme*. I am not aware whether at this moment the royal ordinance, which is necessary for the transformation of the company, be actually signed; but if it be not, it is only a simple formality, which may be adopted any day.

Here, one would have thought, the matter would have ended, and that we should have heard no more about the quarrels of the company, and the St. Etienne folk; but the fact is, that the two adversaries, after having come to an agreement, appear to have fallen out more bitterly than ever; and the last numbers of the St. Etienne journals, which have reached me, are making war on the company as fiercely as of old. Why?—wherefore? Truly, I know not; and all my attempts to get at the bottom of the mystery, have been fruitless. All that clearly appears is, that the mayor of St. Etienne, acting in the name of the municipal council, and of the whole population, have thought right to protest against the company being constituted into a *société anonyme*, and this protest he has communicated to the Government. It further appears, that he demands nothing less than that the company shall be dissolved, because he still maintains that it is illegal. Having communicated what he had done to the Municipal Council of St. Etienne in its last sitting, a vote of thanks was carried to him, and the committee, consisting of members of the council, which was specially formed, to oppose the company. This committee, by the way, has been dissolved, by order of the Government, as contrary to the law. In the sitting referred to, some members of the council insisted that it should be reconstituted. This led to a stormy debate, and eventually the motion was withdrawn—the mover, however, threatening to bring it forward at the next meeting; and this appears to be the position of things at this moment.

It remains to be seen whether the Government will pay any attention to this new outbreak of hostility, and whether this new opposition be the act of the great manufacturers of St. Etienne, who alone have the right to speak in the name of the town, or only the stupid meddling of a knot of brawling demagogues. On these points we shall receive full information, in the course of a few days.

As many Englishmen are interested in this great company, it may be as well to warn them not to attach more importance to the facts here related than they are really worth. As to the protests of the mayor of St. Etienne about the illegality of the company, they are all twaddle. The man might as well assert that the company is made of green cheese, as that it is illegal. The most eminent advocates of the French far have declared, over and over again, that it is perfectly legal; and the Government itself has declared, that that point is so clear, that no discussion can be allowed respecting it. The only well-founded objection that can be made to the company, is that it is virtually a monopoly—that it possesses about two-thirds of the largest and most productive coal-basin of France, which enables it to fix what price it pleases on coal. But does not this objection cease to exist when the company itself offers guarantees that its price shall not exceed what is fair? What, then, can its opponents expect? I have heard say, that M. Lanyer, the deputy of St. Etienne (the same worthy who, in the name of the Committee of the Chamber of Deputies on the Customs Bill, has reported against any reduction of the duties on iron or coal), asserts, that nothing less will satisfy him than an undertaking from the company to sell coal at exactly the cost price! At the cost price!—could a more absurd proposition be made? Poor M. Lanyer is not very bright; but I hope, for his own sake, that he cannot have been serious in making such a very stupid declaration.

Rumours are afloat that the Government intends to take the manufacture and sale of salt into its own hands—to make that article a monopoly, like tobacco, and gunpowder. Although Government monopolies are always objectionable, and always more or less oppressive to the people, the French would, no doubt, rejoice at such a measure, provided it should enable them to obtain cheap salt. The present enormous duty makes it virtually an article of luxury, so much so that thousands of families are almost deprived of its use. A reduction is, however, as I have already informed you, to be brought forward in the course of the present session.

The Northern Railway has, I perceive, already commenced the conveyance of coal from the pits of the northern departments, and from Belgium, in waggons specially constructed for the purpose. These are so built that they can be placed on framework, whereby the coal is loaded at the pit's mouth, and delivered to the consumer, without having to be transferred from wagon to wagon.

The following appear from official returns, just published, to have been the importations made into this country, during the first eleven months of the present year:—Copper, from England, 37,103 metrical quintals (ten metrical quintals are about equal to the English ton); from Chili, 10,681; from other places, 23,859. In the same period of 1846, the importation from England, 40,638; from Chili, 8900; of 1846, from England, 66,872; from Chili, 1890. These figures are very far from being flattering to our exporters. Of tin, the import, in the eleven months this year, has been 15,036 met. quin.; of lead, 10,741; of zinc, 139,470. Of coal, the total was 20,822,008 met. quin.; 13,545,547 being from Belgium; 5,423,270 from England; 1,846,365 from the Zollverein; 6826 from other places. In the corresponding period of 1846, the quantity received from Belgium was 11,394,455; from England, 6,125,853; and, in the same period of 1845, from Belgium, 12,403,155; England, 5,702,078. Of cast-iron, for 1847, the total quantity received was 887,211 met. quin.—of which, 282,847 met. quin. came from England; 558,996 from Belgium; 45,368

from other places; in 1846, England sent 391,561 met. quin.; Belgium, 401,497; in 1845, England, 200,211; Belgium, 266,899.

This has been a very dull week for mining matters, and, indeed, for business of any kind. The French are busily preparing for their grand holiday on the 1st, which is even more to them than our Christmas day.

The St. Dizier journals do not, this week, publish the prices of iron. A German newspaper states, that the Government of Denmark has determined on having the coal pits in the Faro Islands worked by convicts. The coal-field, it is said, is six miles in length, by two in width. The dearth of conveying coal has, hitherto, prevented the mines from being worked.—Paris, Wednesday.

BELGIUM.—Some remarks having been made in the Chamber of Representatives on the small amount received by the Government as rent for mines, the Minister of Public Works entered into some explanations, to show that the present rent was as high as mining enterprises could fairly be expected to pay; and he stated that, in the province of Hainaut, 58 mines are worked at an annual loss of about 87,000*l.*, whilst only 48 are worked at a profit of 163,000*l.*; that in the province of Namur 18 are worked at a loss of nearly 4000*l.*, whilst 15 yield a profit of about 6000*l.*; and that in the province of Liege 44 are carried on at a loss of 54,000*l.*, whilst 40 yield a profit of only 46,000*l.*

The manufacture of cannon in this country is very considerable. In 1846, one house at Liege turned out 9605, another 53,765, a third 17,948, a fourth 11,548, and a fifth upwards of 10,000.

It is stated that the metallurgical branch of industry has found a new opening for its activity in the manufacture of crosses in cast-iron for churches and cemeteries, the consumption of which is, as your readers are aware, exceedingly great in Catholic countries. One establishment has just cast a cross, weighing nearly a ton, for the church of a village in Holland. It is understood, that the English Government is in negotiation with the Government of this country to obtain concessions in the duties on cast-iron and coal, in return for which it offers facilities to the introduction of Belgian products to the English markets; and it is believed that Belgian Ministers are well disposed to cut down the charges on those articles in the Belgian tariffs. On the importation of cast-iron in particular, the duty is excessive and very burdensome to the country, the Belgians having almost as much need of our cast-iron as the French have of theirs. On coal, also, the import duty is at present much greater than there is the slightest necessity for; inasmuch as with such coal-fields as Belgium possesses, it need not dread any competition. I scarcely need remark, that a reduction in the cast-iron duties would be of great importance to the exporting trade of England; for it would invariably lead to a very large demand. A reduction on the coal duties, also, would be advantageous to our coal owners, though, for the reasons just stated, not to the same extent. The reduction proposed for cast-iron is, it is said, nearly two-thirds.

Belgium, like France, suffers from a heavy duty on salt; but the Government resists any attempts to lower it.

The exportations made in the first 11 months of this year have been:—Coal, 1,695,029 tons; cast-iron, *en gueuses*, 105,232 tons; cast-iron, worked, 862,826 kilos; articles in iron, 874,102 kilos; nails, 4,920,128 kilos; rails, 3939 tons; arms, 4,114,721 fr.; machines, &c., complete, 1,803,007 kilos; ditto, in detached pieces, 913,583; zinc, unwrought, 4,405,162 kilos; ditto, wrought, 1,850,289. With the exception of rails and machines, the increase, compared with the corresponding periods of 1844 and 1845, is very considerable.—Belgium, Tuesday.

Original Correspondence.

COMMUNICATION BETWEEN GUARDS AND DRIVERS OF LOCOMOTIVES.

SIR,—I beg to suggest, as a means of obtaining instantaneous communication between guards and drivers, the adoption of the principle of the well-tried and secure expedient of the steam whistle, which can always be heard above the roar of train and storm. In order to carry out this suggestion, which is by no means new, I propose that every guard shall be provided with a compressed-air whistle, fixed close to his seat on the carriage, and constructed in such a manner as to equal in loudness the regular engine whistle—while the greatest facility must be afforded for filling and changing the reservoirs of compressed-air. The form of the reservoirs would, of course, be that of a strong metallic globe, precisely such as was formerly in use for air-guns, connected with a pedestal, fixed on the roof of the carriage by means of a screw joint. The whistle may either be of the kind now in common use, but accompanied with a parabolic addition, intended to intensify and direct the sound wholly towards the engine-driver—or, still better, perhaps, for compressed-air, of the form of a common French whistle, which also has a surrounding globe to reverberate the sound. An ample supply of ready charged globes should be kept at all the stations, conducted on the plan followed in the lamp department, with proper regulations and fines for neglect—so that the guards should never start a train without being provided with one full globe ready for action, as well as two or three reserve globes for substitution, in case of exhaustion or failure. There is no difficulty in constructing metal globes of sufficient strength to stand a pressure equal to that of high-pressure steam; neither will there be any difficulty in providing compressed air for charging the globes. At all principal stations and water-houses there are pumping engines, which, by a very simple adaptation of machinery, may be made to work a triple set of forcing pumps, each compressing the air (say) to two atmospheres, and working into each other, according to a lately proposed and very ingenious plan, so as ultimately to produce a condensation equal to six atmospheres, which would be more than sufficient for all purposes and under any circumstances. The condensing pumps should work into a strong reservoir, furnished, of course, with safety valve and pressure gauge, and also provided with screwed nozzles and stop-cocks—so that the portable globes may be screwed on and filled instantaneously, if required—the reservoir and globes being all proved before use to double the amount of pressure, they may be likely to sustain when in use. All the joints can now be made absolutely and permanently tight by means of vulcanised India-rubber, or gutta percha washers. No apprehension need be entertained in regard to mistakes as to the meaning of such signals, as the signal is always a warning; and a good understanding is sure to take place between the guards and drivers in respect to their management. The same means will furnish a very simple and effective mode of communication between the passengers in a train and the guard, by having a compressed-air whistle permanently fixed to the roof of each carriage, with one or two lines and tassels hanging within, and communicating with the spanners of the respective whistles by means of the usual chains, pulleys, and bell cranks.

H. W. REVELEY, C.E.

Sunny Hill, Parkstone, Poole, Dorset, Dec. 28.

GUN-COTTON EXPLOSION.

SIR,—Anent the remarks of Dr. Murray, on the mystery enveloping the cause of the explosion of this material at Messrs. Hall's establishment, I would observe, that I volunteered to explain and prove to Messrs. Hall, about the time of the inquest, the nature and cause of the explosion, without receiving any reply. I can dry two parcels of gun-cotton, at 130°, without any danger of explosion, and repeat the experiment in another way, either at the temperature of 130° or 100°, with certain ignition of one parcel primarily, and the other secondarily. My opinion is, that the intermeddling by myself, Dr. Murray, or any one else, will be deemed by Messrs. Hall at least impertinent, for which reason I have never deemed it worthy of any public rationale, or notice. It is somewhat ridiculous to read the instance with which Dr. Murray solicits Messrs. Hall to abandon the course of a certain pecuniary fortune. Although I cannot view this paragraph else than an unnecessary scrap, to gratify the call of our friend, Mr. Mushet, made a short time ago, when Dr. Murray is deemed the fittest person to prove the universality of the *Biblical* *Catechism*; but, on the other hand, Dr. Murray is certainly to the point about the disintegrating action of frost, &c., on brickwork, and, methinks, he has given the "eminent engineers" a bone to pick. Perhaps Mr. Mushet will translate this beautiful bit of Italian—"Ed in sal tempo del vespro, la Colomba ritorno a lui, ed ecco! Nel becco una fronde spiccata d'un Ulivo;" and reconcile this fact, with the other fact, that from numberless experiments it has been found, that an olive tree cannot survive an aqueous submergence of six weeks; and these two facts, with the duration of "the deluge," which Mr. Mushet is anxious Dr. Murray should task himself to prove, was universal! As an element in this reply, perhaps Mr. Mushet will state, where in latitude and longitude the Perihelion point was in the epoch of the deluge, and whether its progression was southward or northward, just before this cataclysm. What will Mr. R. Mushet say in reply to my assertion, counter to his, that the so-called imponderables are not only equally in-

fluenced by physical forces, with matter generally, but that their material and ponderable constitution may, with certainty, be inferred from the identity of their behaviour, in respect to the operation of common forces. Barnsbury-park, Dec. 31. WILLIAM RADLEY, Ch. E.

EXPLOSIONS OF STEAM-BOILERS.

SIR,—In continuing, from last week's Number, my reply to "An Engineer," I shall, first, take his assertion, relative to the steelyard safety-valve being the most convenient form, and that universally adopted. The convenience of form is only useful as being conducive to those practices, which cannot be too severely reprobated. By way of illustration, let me, for one moment, bring before your readers the *Cricket*, as she existed prior to the 27th of August; take her laying at Dyer's Hall Pier, steam blowing from the weighted valves into the funnel, and good fires; the spinnings at the end of the safety-valve levers. We have now only to imagine some person in charge of her engines, whose capabilities for the efficient discharge of his duties and the safety of the public were on a par with Hehsemann's predecessors. He hears that the *Citizen A*—which has, probably, beaten his vessel in her downward passage—will start for the west end at the same time as himself; application is immediately made to the spinnings, and the valves secured. He has heard that the boiler has previously been loaded to 80 lbs. to the inch, by Mr. Joyce's people, and worked at such pressure—about double that indicated by the gauge. He does not know the amount of error of his gauge, and, consequently, imagines that he is perfectly safe, until the gauge indicates 80—his real pressure being about 140; it is only in similar cases that this convenience of form is useful to such parties. The valve instanced by me is of a similar form to that rendered, by law, in Belgium imperative—and is adopted by other makers; and not the peculiar arrangement of Mr. John Penn, who, we are told, is a "rival manufacturer" (?) We will next test the truth of its universal adoption. To do this, I will take the vessels plying on the Thames above Gravesend—their number amounting to over 90; and those steelyard levers, of universal adoption, according to "An Engineer," will be found in the following vessels:—*Waterman, 9, Locomotive, Eclipse, Vivid, Era, Echo, Citizen M, Cricket, Ant, Bee, Sunbeam, Rainbow, and Prince of Wales*. In 92 vessels trading on this river, the steelyard arrangement of valves only amount to 12, 25 per cent. of which belong to the *Ant and Bee Company*: this is very far from universal adoption. There may be added some few tugs, which also use this convenient form; as also the vessels constructed by Mr. Napier, of Mill Wall; but their use cannot be too soon abandoned. The accidents that have arisen from steelyard levers are numerous; the *Cricket's* being, I fear, not the last on the list.

With regard to the construction of the Mariotte gauge, the only fact required to be known is, the law of the compression of gases—what, although generally attributed to the investigations of the philosopher Mariotte, is, in reality, a discovery of our own countryman, Dr. Boyle, in 1662, and, subsequently, investigated by Mariotte, Dulong, Orsted, and others, of which the archives of our various scientific bodies bear ample record. The most usual form of pressure-gauge employed is a small bent tube, containing mercury, of a form similar to the annexed sketch, provided with two bulbs, and filled with mercury.

From the zero of the scale to the top of the tube is a column of air, 18 in. long. On pressure being applied at A, the column of air is compressed; and, on the addition of 15 lbs. pressure, the air will be compressed into half its original bulk, or 9 in.; at a pressure equal to 45 lbs., into a space of 4½ in.; and, on the pressure increasing to 105 lbs., the mercury will be compressed into a space not exceeding 2½ in. But few thoroughly understand the construction of this gauge, although extremely simple; objections have been urged against its adoption; but, with ordinary care, and when not made intentionally erroneous, it may be relied on with certainty. It was stated to me, as a cause of the erroneous action of the gauge in the *Cricket*, the high temperature of the engine-room; and only shows how cautious men should be in accounting for occurrences, without being provided with facts to back up their opinions. The expansion of the column of air had forced the mercury down, and thereby caused the erroneous indication of pressure—so said an engineer. Test his assertion according to experiments tried by Dalton. Air expands 1-4634 part of its bulk by each degree of Fahrenheit, and, on the experiments instituted by Gay Lussac (*Annales de Chimie*, xlii. 170) on the expansion of 100 volumes from 32° to 212° F., the degree of expansion was 1-480° F., being a confirmation of Dr. Dalton's experiments. The erroneous results indicated by this gauge mostly arises from other causes; and engineers are but too often cognisant of the erroneous indications of their gauges. This emanates from a desire to keep the real pressure from the knowledge of their engine-drivers—so that competing manufacturers, and on the ignorance of the superior results, or otherwise, obtained by certain sized cylinders. To accomplish this object, various plans have been resorted to, tending to show less than the real pressure is exerted within the boilers. Some are contented with shifting the index-plates upwards, and, knowing the amount of error, have only to look if the plate has been shifted, for instance, half an inch upwards, to that distance above the height of the column of mercury—and they can thus read their gauge correctly. Others have indices on which the pounds pressure on the circular inch is substituted for the square inch, by which the following erroneous table is exhibited:—

Amount indicated by Pressure-gauge.	Lbs. pressure in boiler.	Amount shown less than the real pressure in boiler.
3-997	5	1-073
7-984	10	2-146
11-971	15	3-219
15-958	20	4-292
19-945	25	5-365
23-932	30	6-438
27-919	35	7-511
31-906	40	8-584
35-893	45	9-657
39-880	50	10-730

These are all errors of the mind, which cannot be too soon eradicated. Scientific men should have no suppression of facts, no petty jealousies. The period has arrived when the facts elicited by one should be disseminated to all, as tending to the general advancement of engineering knowledge, which must ultimately benefit all engaged therein.

"An Engineer" shall be saved the trouble of again putting his *enigme*, as to the means by which water could obtain access to a boiler through a feed-pipe nearly filled up. I am sorry to have such a question, emanating from one who styles himself "An Engineer." In his zeal to hold me up to ridicule, he has himself become the target. Is it a fact that, in 1847, "An Engineer" can exist so grossly ignorant of the action of the common force-pump? To answer the evident wishes of the engineer that the explosion occurred from shortness of water, the supply pipe to the pump, and not the feed-pipe to the boiler, must have been nearly choked; but this pipe was not foul—therefore, water could obtain access to the barrel of the pump, and, having once passed the foot valve, on its closing the water, must either be forced through the supply pipe, or the water is nearly incompressible, burst the pump, if it could not obtain access to the boiler. No water was perceived by the engineer passing the gland, surrounding the plunger, which would have been the case had the water not obtained exit from the barrel. The only point that could aid "An Engineer" in his theory would be, the pump valves being in a faulty state, which ought not to be the case, after a thorough overhaul, only a few days previous to the accident. Why was the feed-pipes that have to perform so important an operation in the proper fulfilment of its duties not inspected? Of a verity, this unfortunate vessel can only be compared to a patient in an alarming state, who has had the attendance of some junior practitioner—the few blanches perceptible to the eye, by certain doses of empty paper, are removed—the patient pronounced convalescent, and sent to perform his ordinary avocations; but the vital parts—the boiler—the heart of our patient, received no attention—pronounced convalescent without any examination, when stated to be convalescent; the auricles and ventricles of the heart—the boiler—was in a most diseased state, and partially admitted by "An Engineer," and, after the patient has been returned with, I imagine, a proper certificate from the hands of the doctor, it, on the 27th of August, expired through, if we are to credit "An Engineer," a sudden attack of apoplexy. Then, and not till then, is the stethoscope of science applied to investigate the cause of death, and the diseased state of the heart rendered strikingly apparent. Your correspondent, ask, did I ever witness an explosion before? I answer, yes; and have investigated several—the results of some of which, and they are not isolated cases, have appeared in your columns. I did not take quite so prominent a part in any as in the present case, and should have remained as heretofore unknown, had circumstances permitted. The facts I have stated are all susceptible of proof; and I hope they will open the eyes of many steam-boat companies to the necessity of placing men thoroughly competent—men who have undergone some examination as to their capabilities—and rid our mercantile marine from many of the mere automatons but too frequently intrusted with the lives of the public, and establish some board before which all engineers, before obtaining employment, undergo a most rigorous examination.

Had such a state of things existed, should we have had this lamentable accident—lamentable, as causing the deaths of many individuals, and most injurious, as affecting the finances of a scientific gentleman, who has done much to deserve the thanks of thousands of this metropolis? The accident did not arise from defects of principle, the application was most ingenious; and it cannot be too regretted, by all who have the well being of mechanical pursuits at heart, that such an occurrence should have happened, tending to damp the ardour of gentlemen, without whose capital and enterprise the mechanic arts would progress but slowly. The defects in carrying out the principles have been the cause, moving to the accident, combined with the employment of men totally unfitted for their situation—the superintendent engineer was evidently one of this class, his knowledge of the most mediocre description. Where was the amount of practical experience that ought to have been in his possession—where the vessels in which he had been employed? The public safety and welfare demands that some board be established, for the supervision of our mercantile steam marine. Railways are subjected to inspection—why are steam-boats excluded? The lives of the public are as valuable in the one case as in the other. When such a board is established, which probably will not take place until another appalling accident brings the matter before the Legislature, we should then have a total reformation of steam-boat management. Engineers of ability and sobriety would alone be employed; the class at present known as *shovel engineers* would find their proper level, and the finances of all steam-boat proprietors increased to an extent that would surprise them. *Lean's Monthly Reporter*, of the performance of Cornish engines, given in your *Journal*, has done much to stimulate the men, and have saved thousands to mine proprietors. Is it, in this age of Science, impossible to adopt some similar method, to excite the attention, and stimulate steam-boat engineers? I have long witnessed the absolute necessity of some precautions being adopted, which would tend to raise steam-boat engineers from their present debasing condition, and render them respected in the eyes of their employers and the public.

In the engraving, O and O' represents the mercury when steam is down in the boiler. On pressure being applied at A, it forces down the mercury at O', and the mercury at O ascends, and compresses the column of air, which has also, in ordinary gauges, to have

an additional pound added for every two inches of compression, due to the elevation of the mercury. By shifting the index—the work of an instant—up to the point shown by the dotted line, the erroneous results shown by me in the letter to Lord Chief Justice Denman is accomplished. The two bulbs are for the purpose of preventing any considerable fall of mercury at 01—they acting as reservoirs. R. WATLEY BAKER.
Park-terrace, Battersea, Dec. 30.

THE LIGHTHOUSE ON THE GODWIN SANDS.

SIR.—Mr. J. De la Haye is perfectly right in his remarks respecting the iron piles. Certainly no one could for a moment suppose that a treble row could be driven with such precision as to prevent the water from rushing into the foundations between the joints. It must be remembered that, in coffer-dams, even where there are three rows of piles, each being 6 ft. apart, and the spaces between well filled with puddle—even with these precautions—the water, which has found its way into the dam between the piles, has kept a 20-horse power engine at full work. This I know to have been the case at the Pesth Suspension Bridge, in Hungary, in each of the coffer-dams. From what I have seen at that bridge, I should say that it would be folly even to attempt a foundation without first sinking a cylinder to give a sufficient basis for the intended structure. Your correspondent, "M.," in your last Journal, appears to have fallen into a delusion, as many others have done, whose object has only been to erect a beacon. What use is a mere beacon? Something should be erected substantial, where, in case of an accident, the crew could find comfortable accommodation to receive them. What apartments could a 7-ft. pile furnish? Again, in case of a vessel being driven against such a structure, as that proposed by "M.," it would not be able to resist the shock, and, therefore, must prove an abortion. The chemical action of the marine acids on cast-iron altogether assures us that cast-iron structures at sea are highly objectionable. The following fact may not be generally known among your readers, that, during the clearance of the wreck of the *Mary Rose*, which had been sunk at Spithead, and had lain under water for 150 years, all the cast-iron shot which were taken out of her, on being exposed a few days to the atmosphere, became red hot, and, in a short time after, fell into a fine powder, which had every appearance of black lead. The cause of this, I believe, has not been explained. The base I propose for my lighthouse is 70 ft.—30 ft. the diameter of the cylinder, together with external piles and concrete, would be 70 ft.; or I would sink a cylinder 60 ft. diameter, and well secure it with piles and concrete, as before described—say, for the whole, 100 ft. diameter in the centre—should raise the lighthouse, and around its base to the height of 50 ft. above high water-mark; the whole, of which should form a bomb proof fort, mounted by 50 guns, and, in case of emergency, capable of holding 200 men. Such a fort would completely command the channel.—G. SHEPHERD, C.E.: Fleet-street, Dec. 29.

LIGHTHOUSES ON THE GODWIN SANDS.

SIR.—In the *Mining Journal*, of the 11th December, you did me the favour to insert some few remarks of mine on the above subject, which has, of late, occupied the attention of several of your correspondents. The suggestions which they contained were given, with the best of feelings, for the consideration of the fortunate engineer who may have the undying honour of being trusted with, and successful in, the execution of this important national work; and yet I am immediately attacked by two of your correspondents—Messrs. De la Haye and G. Shepherd—as if I were some great school-boy, laying plans for building a card-house, or sinking a pigmy well in my tutor's play-ground. To the first of these gentlemen I shall merely say, that, from all I have seen of his lucubrations in your columns, I do not think he is capable of judging whether the term "tyro" is applicable to me or not; and that his pretty little manageable iron cylinder, of 200 ft. diameter, 20 ft. high (when the sands are 40 ft. deep), and half an inch in thickness, is all of a piece with his magnificent project for constructing a railway tunnel, beneath the waters of the English Channel, from Dover to Calais. The entire of his remarks, in your last week's Journal, evinces complete ignorance of the peculiar properties of sand, and want of experience in the construction of works in such an element, more particularly as relates to the local peculiarities of the "Godwin."

From Mr. G. Shepherd, who always dubs himself "C.E.," I should have expected better things, and a little more courteous mode of expression towards one who penned not a word in disparagement of his plan for a lighthouse, but rather supported it—merely suggesting a different plan of carrying out the same principle. But Mr. Shepherd, while he indulges in not very complimentary names—and in his letters, in general, which have appeared in your columns, eschews that adherence to English grammar, which one would expect from a well-educated C.E.—now contradicts himself; for, in the same letter in which he tears my plan to pieces, as the idea of a "novice," he says I copied it from his "communication of 27th ult., except his treble row of piles."

It is very evident to me, Mr. Editor, that Mr. Shepherd does not understand the plan I suggested, and that he is one of those slovenly readers who rush through a subject without thinking, and declaim against its author without consideration; or, in the first place, making himself thoroughly acquainted with his intentions; and, notwithstanding the grime of our Liverpool friend, and the rough banter of Mr. G. Shepherd, I will again, with your permission, endeavour more clearly to describe my meaning. The double row of piles which I suggested (there might be occasion for three) should be 6 ft. apart (there is no objection to that, Mr. Shepherd); they would be cast in the form of the arc of a circle, so that the faces should meet perfectly flush; and if dovetailed, or only scarfed or lapped, so much the better. At about every 10 ft. of the circumference, I would drive a cross row of piles between the two circles—thus forming compartments, which would facilitate the clearance of sand, and filling in with concrete (not puddle, Mr. Shepherd), as well as add greatly to the strength of the whole. Notwithstanding my being a "novice," as to coffer-dams, in which, from his remarks, I am satisfied I have had much more experience than Mr. Shepherd, I am clearly satisfied the above might, with proper precaution, be easily carried out; and let the face of the chalk be ever so uneven, a cylinder would be formed, water-tight from top to bottom, and of great strength. What will Mr. Shepherd or Mr. De la Haye do with their monstrous cylinders, if there are several variations of level on which it is to rest, of 2 or 3, or even 6 ft., or perhaps more, without saying a word about the difficulty of getting one to its destination? It is easy to form a cylinder of sheet-iron of any size, but not so easy to manage it on a treacherous quicksand like the "Godwin." In tubbing coal-pits, or in sinking large brick shafts, as was done at the Thames Tunnel, there is *terra firma* to operate upon; but the erection of a lighthouse on the proposed spot must be, under all circumstances, a novel undertaking, and I can see several reasons while a "piled" circular barrier has far greater chance of successful results than a sheet-iron cylinder; the subject is important, and every suggestion is worthy of notice. I can assure your two correspondents, who have each hit on the term "Tyro," which they, doubtless, think a very witty play on the word "Tyro," that I am too old, and have had too much experience, for the name to be well applied; but, as it does not in the least disturb the serenity of my mind, I shall still subscribe myself—TERRO-NAUTICUS: Blandford-street, Dec. 29.

CHARGE OF DISCLOSING TELEGRAPHIC EXPENSES.—In our last Number, we inserted a statement, taken from the *Carlisle Journal*, that a summons had been taken out at Newcastle-upon-Tyne, against Mr. T. F. Dickenson, shareholder, of that place. We have received two communications on the subject—one from Mr. T. F. Dickenson, dated Dec. 28, in the absence of the accused—and another from Mr. J. Dickenson himself, requesting us to contradict the observations, and enclosing us a copy of the *Newcastle Advertiser*, in which he has published a long refutation of the charge. In the first place, these gentlemen state, that no summons was ever issued, nor has Mr. Dickenson since received from the company any official communication whatever—that they verily believe it has been a *ruse*, on the part of the agents of the company, to bring the telegraph into notoriety—a step totally uncalculated for, as it has sufficient merit to recommend itself to public notice. In his refutation, published in the *Newcastle Advertiser*, Mr. Dickenson declares, he has repeatedly received intelligence by telegraph, but on every occasion for his clients, for which he honourably paid, and for which he can produce the receipts. It appears, that during the preparation of a telegraphic subscription-room in Newcastle, to which Mr. Dickenson had given notice of becoming a subscriber, he found it necessary to obtain information, and occasionally applied to the office for such purpose, always paying the clerks, without, for a moment, thinking that the money would be appropriated by them, under a mistaken notion of his motives. He fully explains the circumstance of going with one of the clerks to the Queen's Head Tavern, which had been so much commented upon, and he says, "egregiously misrepresented" before the magistrates. One circumstance appears more exculpatory than all the rest, which is the fact, that the sum Mr. Dickenson is charged with bribing the clerks with, is more than double what he would have had to pay under the company's official and regular charges. We regret having been the means of aiding in the circulation of an unfounded charge, and publish, with pleasure, on the part of Mr. T. F. Dickenson, this refutation.

COAL BEDS OF THE RHINE.

There is a map published in the sixth volume of the *Transactions of the Geological Society*, which will furnish the reader with the best survey of the gigantic highlands which the Rhine traverses in its course between Bonn and Mayence. The rocks of old formation are there shown to have been upheaved in immense masses, which may be compared in extent and character to Wales. The Ruhr, like the Severn, runs between the old rocky mountainous tracts, and the new formations, containing the coal measures and salt deposits. But the Rhine cuts the great highland into two parts, the northern half lying between Ruhr and Lahn, while the southern lies between the Maas and the Nahe and Saar. The coal beds of the neighbourhoods of Aix la Chapelle, and of Liege, are like those of Westphalia, in deposits formed on the northern fall of these hills. The coal field of Saarbrück lies on the southern declivity. To the east the valley of the Lenna marks its subsidence to tertiary formations of recent limestone and accompanying rocks, and in the indentures formed by the Lahn, and the Rhine between Rhurort and the Drachenfels similar rocks also occur. But, on entering the gorge that forms the picturesque part of the Rhine, these recent formations disappear, and the river seems to have eaten its way between old slaty rocks, that formerly stood in connection with each other. The irregular masses presented by the rocks that overhang that part of the river speak as impressively to the scientific, as to the sentimental traveller, and the irregularity and frequent reversal of the strata betoken the force of the subterranean heat which raised such immense masses without all crystallising them. In the dislocations and ruptures formed during this great natural convulsion, the veins of metal that traverse these hills in all directions were, with their accompanying mixtures, infiltrated into their present locations. The hills that look so barren to the traveller's eye possess a deeper interest than that awakened by their outlines or gloomy masses. They are filled with wealth, and inducements to exertion. This highland is at once the Wales and the Cornwall of Western Germany.

The scientific world is much indebted to the labours of Professor Sedgwick and Sir R. Murchison, as well as to the munificence of the society which provided the funds for this useful undertaking. Our readers can trace the map to good account by using it as a guide to the prominent features of the country that we have undertaken so to describe. In following its indication we find that the regions where coal is deposited are those where manufacturing on a large scale has commenced, and may be expected to attain great extent. These are the districts adjoining the Ruhr and the Lippe, in Westphalia, the country between the Belgian frontier and Cologne, and the vicinity of the Upper Saar and Moselle, between Strasburg and Treves. The seats of smaller manufactures may be sought between the localities here pointed out, as being those where water-power abounds, or which are supplied with coal by the navigable rivers and railroads. As a natural consequence, the streams that fall from these hills formed the only power in ancient times that was available for the manufacturer; and it would be a curious subject of research to ascertain at how early a date the water, which was here in use, was a substitute for the human arm. That it was not employed in the most ancient periods is clear from the scale on which smelting was evidently carried on, as this process was confined to small furnaces attached to portable forges. The cinders and slag of these old furnaces are constantly found in remote parts of the forests, and although, it seems probable that malleable iron was obtained from the ore at one process by a slow and wasteful manipulation, yet the quantity gained can never have been more than it was possible to work up with hammers of no extraordinary weight. We were repeatedly shown the remnants of those hand furnaces in the hills round the Upper Sieg, where slag, both of iron and copper, is constantly met with.

Turning our view from the boundaries and outskirts of the great highland of Rhenish Prussia to its internal parts, we can trace a line running from the neighbourhood of Dusseldorf N.E. past Meinertzhagen to Bilsen, in various parts of which the old mountain limestone rises to the surface. This is the water shed between the rivers Sieg and Wupper. Its elevation is very considerable, being, near Meinertzhagen, 1200 ft. On the north of this line, recent limestone and various sandstones occur. On the south side nothing but slate and graywacke is to be met with, excepting along the banks of the Rhine. The slate of which the oldest formation is composed is again broken through by a line which runs nearly parallel to the former, and which, drawn from the waters of the Eifel to the Drachenfels, rises behind Altenkirchen and Hasenburger to 2000 ft. above the sea, forming the summits of the Westerwald chain. These summits are all of basalt. On the south side of the Westerwald, towards the Lahn, the old states are continued between the Drachenfels and Lahnstein, where they merge into the states of the Taunus. But from Hamburg towards Limburg, and from the summits of the Westerwald towards Daltenberg, crystallised formations, greenstone, "schalstein," &c., are found; and these are succeeded by limestone and diluvial deposits. This geological sketch, which it is very easy to follow on the map we have named, gives the key to the mineralogical features that most interest the manufacturer. In the old states, between the basalt of the Westerwald and the limestone of Meinertzhagen, the sparry iron ore is exclusively found. It may be said to be monopolised by the fluvial regions of the Sieg and the Wied. The largest copper deposits again are found in the trap formations about Dillenburg. The red hematite ore belongs to this division. Lead veins, accompanied with silver and zinc, blend and traverse the whole of the highlands; but the most productive are found in the old states of the Sieg and Wied, and in the prolongation across the Lower Lahn to the Taunus. In the tertiary formations falling towards the mouth of the Wupper and towards Westphalia, as well as towards Aix-la-Chapelle, calamine is the most remarkable mineral, being both abundant and rich in metal. Manganese is abundant in the diluvial deposits, and is most so in the neighbourhood of the Upper Lahn.

Another remarkable mineralogical fact is, that in the valley of the Lieg, cobalt is found without nickel. At Dillenburg, nickel is found without cobalt. Few tracts that have been fully explored present such distinct mineralogical characteristics as this highland, and there are here materials enough for study and speculation. The owners of the soil have not been backward in appropriating what they discovered to their own use, and, as we have already stated, mining is their chief occupation. Whatever other business a man may follow, he is sure here at some time of his life to be entangled in mining speculations, which, indeed, form the sole objects of the thoughts of the majority, for whom the gambling nature of the occupation is rather enticing than discouraging.

One of the first observations that seems to have led to practical result was, that the sparry iron ore was confined within the limits we have pointed out, and which were mostly embraced by the principalities of Nassau, Siegen, and Sayn, with the valley of the Zeller, the seat of some small free dynasts. We shall see the political consequences to which this discovery led. We may conclude our geological survey with pointing to the salt springs that run south of the Taunus in intervals along a line drawn through Crentynach, and Wiesbaden, to Soden, Hamburg, and Nanheim, in Hesse. Salt is also found in the north side of the hills at Neusalzwerk, in Westphalia, at a great depth below the surface.

THE IRON TRADE IN SCOTLAND.—We hear the blast-furnaces of the Ayrshire Iron Co., at Dalry, are to be stopped—an announcement which has caused much dismay in the district, as a vast body of workmen will be thrown out of employment at the most inclement season of the year.—The affairs of the Ayrshire Iron Company, it is said, will be less serious than was anticipated; as at present valuations the sum of 4l. per share would meet the deficiency, the company may, therefore, go on with hopes of better success hereafter. So rapidly have the wages of the miners fallen, that they are now paid only 2s. 11d. a day, whereas some time since they received 5s. a day.—At the anniversary of the Glasgow Master Ironfounders' Association, held the other day, it was stated by Mr. Neilson, that since the introduction of his hot-blast process, the manufacture of iron in Scotland had increased from 40,000 tons, which it was in 1828, to now nearly 500,000 tons annually.

SHROPSHIRE IRON-WORKS.—The works in this county are extremely dull—the Old Park Works, of B. Botfield, Esq., have been standing during the last five weeks; and the Stinchley Works, belonging to the same gentleman, are at half work, in consequence of the stagnation of the trade, and the limited demand for iron. The colliers in these districts received notice on Saturday last for a reduction in their wages of 9d. per day.

THE WAR IN MEXICO.—A good deal of misapprehension appears to be entertained by a portion of the public press, respecting the cowardice of the Mexicans in the late contest. It has been very generally given out, that the Mexicans will not fight in the open field; but are only fit for a sort of guerrilla warfare—attacking their enemy at disadvantage, and only surprising parties when they find themselves on the safe side. Now, the following return of the losses of the two armies—in regular pitched battles, and in storming fortresses—evinces that this opinion is erroneous; and that some hard fighting must have taken place, or human life could never have been sacrificed, and prisoners taken, to such an extent. General Scott, in summing up his losses since the United States' army arrived in Mexico, gives a total of 2703—including 388 officers. The Mexicans, out of an army of 30,000 men, have lost more than 7000 officers and men, and 3730 have been taken prisoners—one-seventh of whom are officers, and among them 13 generals, of whom three have been presidents of the republic.

STAMPS ON BILLS OF EXCHANGE.—Mr. Wyld, M.P., has just procured a return (printed on Friday) of the amount of duties received in the several years between 1810 and 1846, both inclusive, for stamps on bills of exchange or promissory notes, and bank notes. The largest amount of duty was paid in the year 1818, when it amounted to 845,749l. 15s., and the smallest in 1832, when it was 545,801l. 3s. 1d. In the last six years (from 1841 to 1846 inclusive) the duties amounted to 660,153l. 17s. 6d., 564,413l. 9s., 576,729l. 8s. 4d., 558,586l. 8s. 9d., and in 1846, 571,842l. 10s. 1d.

THE RAILWAY ACCOUNTS BILL.

The Bill presented by Lord Montagu to the House of Lords on the 20th, is entitled "An Act to provide for the more effectual Audit of Railway Accounts;" and the method by which his lordship proposes to accomplish this object, is the appointment, in cases where it may be demanded by a certain proportion of the shareholders, of an official auditor, to be chosen by the railway commissioners, whose duty it shall be to examine the whole of the directors' books and balance-sheets, prepare a statement of his own of the company's transactions, and "report his view of the profit and loss which shall have arisen thereupon in the course of the year, half-year, or other period, to which such balance-sheet relates." The option being left with proprietors whether to avail themselves or not of this measure, its operation, in any part of Great Britain at least, is not likely to be extensive. The majority of railway shareholders in this island are men who have the settled habit, and a pretty strong conviction of the necessity, of attending to their own business—the men whom they entrust with the charge of it are chosen for qualities known to deserve confidence; and should this be forfeited, English proprietors will not be at any loss to find amongst their own number others, to take their place, to whose honesty and business-like qualities the accounts will be safely trusted. The vigilance with which all parties concerned in these accounts are disposed to watch over them—the fullest exercise of which is already secured by the existing law, to be mentioned presently—has hitherto been found quite sufficient for their protection; and were a stricter inspection thought necessary, they would not be much inclined to call upon the State for the means of applying it. They would use their own ample powers, and help themselves, as Englishmen are accustomed to do.

In Great Britain, we say, there is little chance of any one desiring to use the assistance which Lord Montagu—without any stimulus, we apprehend, from the railway interest in this country—is good enough to offer to proprietors who may suspect that their business is unfaithfully managed, and who have not energy enough to rectify it with their own hands. From Ireland, indeed, the notion of a Government audit was not long since transmitted, at the instance of a general meeting in Fermanagh. The gentlemen assembled on that occasion, resolved that one of the causes of the slow advance of the railway system in Ireland was a want of confidence in the good faith of its managers; and in order to remove this evil they proposed something like the plan now brought forward by Lord Montagu. Whether the state of things in Ireland is, or is not, really such as the meeting in question took upon itself to declare, we shall not now inquire; but this may be distinctly asserted, that if the alleged distrust really does exist, and is at all justly entertained, it is not the appointment of any outward control that can remedy such an evil. A partnership—as it was rightly observed by the *Railway Chronicle* on the occasion of this same meeting—the members of which cannot trust each other, but must call in help from without to keep the funds from being plundered, and the accounts from being falsified—is in no condition to act in concert for any good purpose whatever. To pursue a common end by combined exertions under circumstances of universal dishonesty, is impossible. The very foundation of all such unions is laid in mutual reliance on the general probity of the individuals composing them, and in the internal means they possess for keeping the partnership affairs in order. To declare that no reliance can be felt, and that such internal means as they have are not sufficient, is equivalent to the confession that joint-stock undertakings, with these untrustworthy and suspicious elements, are simply impracticable. In Great Britain we owe the magnificent works which have enriched the nation within the last 15 years to a totally different state of things. We are perfectly able to regulate our own accounts; have no difficulty whatever in finding directors and managers, whose honesty in rendering them may be, and is, implicitly trusted; and we should as soon think of calling in a street-sweeper as a Whitehall emissary to audit them, in case any source of error were to be suspected. There was, we believe, no desire even for any further precautions on this head entertained by railway proprietors in 1846, before the new Acts were drawn up. The manner in which directors were appointed by rotation, the tried character that was a condition of their appointment, the interest which the shareholders felt in every detail of a business that came directly home to their pockets—these had already secured a perfectly satisfactory method of account keeping. The provisions in the Railway Clauses Consolidation Act on this subject were passed altogether at the instance of the Board of Trade; and, at all events, with these now established as law, no English proprietor can have a moment's anxiety, as to the veracity of the balance-sheets periodically laid before him. The audit clauses of that Act are too generally known to all concerned to require any detailed enumeration here. They supply a complete check upon the directors' statements, through an inspection exercised at stated periods by 8l. persons, chosen by the shareholders from among their own body; and of all the wants that could possibly occur to them at the present moment, the last would be that of the importation of a stranger as an auditor to supply the place of these; but, if to call in a stranger were ever found expedient, it is not in any Government office, we apprehend, that the proprietors would voluntarily be disposed to seek him, or that a business inquiry, much of business, accustomed to inspect accounts of this class, and familiar with the nature and details of railway expenditure, would be demanded; and such men, of course, it would be felt to be a mere absurdity to think of obtaining from the commissioners at Whitehall. The appointments to that body have been, so far, made on the avowed principle of excluding every one who could by any possibility have had any, the least, practical acquaintance with, or share in, railway business. The deputies likely to be employed by heads thus chosen, would not be of the species to which shareholders would naturally resort for a verification of the accounts of this business, were they disposed to look abroad for it. The commissioners, should Lord Montagu's bill be passed into a law, will not be much troubled by applications from any British railway body, for half-pay officers or Government clerks (the best kind of agents they would be apt to depute), to examine and report on the details of a business of which they must be absolutely ignorant.

It is no part of our care to inquire what can have caused Lord Montagu's anxiety on this head; whether he may have been moved to it by representations from his native Ireland, like those of the Fermanagh meeting; or whether his personal recollections of the evils of negligent account-keeping, of which the office he presides over furnished not long since a notorious instance, may have rendered him sensitive on the subject of an audit. The railway proprietors, for whose advantage this measure is professedly brought forward, will hardly give his lordship much thanks for his well-meant interference. They deem themselves quite able to look after their own concerns; they are not accustomed to allow their heads of offices to receive salaries for duties carelessly performed; and it has not occurred in any of their establishments to find that entries have been falsified, and gross speculations committed without detection, for years together, from the want of due care in the parties paid for controlling them. Whenever this shall have become general, and they feel themselves too ignorant or idle to remedy the evil by a stricter inspection of their own affairs, they may be glad to avail themselves of Lord Montagu's Act, but hardly until then.—*Daily News*.

LITERARY NOTICE.

Chambers' Information for the People. W. and R. Chambers, Edinburgh.—Nos. I. to IV. The reprint of this series of valuable publications—treating on scientific and useful subjects—we hail with pleasure, as affording much useful information, in a popular style; each number, on the various subjects to which it is devoted, recommending itself to the attention of those who possess not the means, in a pecuniary point of view, or the time necessary of acquiring information from the several works published in a more expensive form, and entering into those minutiae which can only be understood and appreciated by the student and the man of science. The aim of the publishers, in reprinting the series, is to afford to the "many" that information which, from its nature, has hitherto been confined to the "few;" while, we feel, that, in directing attention thereby, we are promoting the main object in view—their extending knowledge. The first four numbers, which are now before us, treat on Astronomy, Geology, Meteorology, and Physical Geography, which will be followed by Mineralogy, Metals, and Metallurgy, and others of a similar popular nature, from which we shall from time to time make such extracts as may be not only of interest, but conducive to the circulation of the work in giving it publicity. Each number is perfect in itself, and will be found to convey a fair outline of the subject on which it treats; and, in many instances, doubtless, induce the reader to search for more detailed information in other works. It will be sufficient for our purpose, on the present occasion, to glance at the number devoted to Geology, and to its contents. After a description of the nature of the science, that portion designated "Descriptive Geology," is entered upon, while "Economic Geology," and other subordinate branches, will form matter for subsequent treatises—"Physical Geography," which pertains to the subject, being the substance of the article in the fourth number. In that under notice, we have several papers, or chapters, on the causes modifying the earth's crust, whether resolving themselves into those termed *degrading* and *elevating*—or, in other terms, whether mechanical, chemical, or vital—in their nature. This portion, like others, is accompanied by neat wood-cuts, as explanatory of the type treating on the reduction of elevated portions of the earth's surface, and the transport of the materials to lower levels, as well as the igneous agency as developed by volcanoes, earthquakes, and gradually elevating forces. The next subject treated on is one of the greatest interest to the geologist and mineralogist—that of the classification of rocks, dividing the unstratified from the stratified, as well as distinguishing those of the latter recognised as primary transition, secondary formation, and tertiary, commencing with the gneiss system, immediately riding on the granite, and advancing to the highest or earliest measure, or rock. These several rock formations, with the organic remains, are described, with illustrations, at a sufficient length to enable the reader well to comprehend the subject. We reiterate, until our next, a notice which we had no opportunity, and which enters more fully into the subject of mineralogy—in the meanwhile, we most heartily recommend the series to the attention of our readers, who will gather much valuable information, rendered in a simple and comprehensive form.

New Library of Useful Knowledge. Craddock and Co.—Nos. XIV. and XXVII.: pp. 64. This publication, of which the numbers under notice form a part of the series, is issued at a price which will render it attractive; and, each number being complete in itself, we doubt not but that it will become popular with the several classes to whom it is addressed, varying in its subjects from the Flower garden's manual and English cookery, to the sciences of geology and mineralogy, taking in its course Australia, Newfoundland, and China; while the steam-engine, and physiology of health, with botany, and preserving, and pickling, are not lost sight of. It must not be understood that, from the variety of subjects treated upon, we would wish to convey any impression that the one, or other, or "One and All," are not good—inasmuch that, with a careful supervision in collecting the material, we are well convinced that publications of this kind, as elementary or introductory works, may be rendered not only instructive and amusing, but furnish much valuable information, in a condensed form. It is quite clear, however, that the case has not been manifested in the present instance; for, if we mistake not, we find the same words in works of ancient date, while it is manifestly clear, from the number on geology in *Chambers' Information for the People*, and briefly reviewed in our present Number, that either Messrs. Chambers have borrowed from the *New Library of Useful Knowledge*, or vice versa. We will extract from Chambers's, one or two paragraphs at page 18, and contrast them with others which will be found at page 12, in the little work under review. Chambers says:—"As degrading forces are chiefly owing to water, so those of an elevating character are chiefly owing to fire. They are, therefore, sometimes comprehended under the term igneous agency." The manifestations of igneous agency at present observable, may be considered under three heads—namely, volcanoes, earthquakes, and gradually-elevating forces. These phenomena may be viewed as the effects of subterranean heat, operating under different circumstances. A volcano may be described as an opening in the earth's surface, bearing the general appearance of a vent of subterranean fire, and through which smoke, cinders, and ashes are almost continually issuing, but which sometimes discharge great fragments of rock, and vast quantities of melted rocky matter, or lava. The general effect is a throwing up of earthy material, in a conical form, from a low to a high level."—Now, on reference to the publication under notice, it will be found that the words used are nearly the same. We know not what may be the opinion entertained by others, but ours is conclusive—that fairness has not been displayed on the one or other side. Both parties, it is true, may have borrowed from one book, and it may be said, that as matters of fact, they could not be conveyed in other phraseology; however, we think, some more convincing evidence and explanation should be afforded. It may be naturally inferred, after the testimony we have given of Messrs. Chambers' labours, and assuming, as we do, their publications to be carefully compiled, that we are ready to attest some evidence in favour of that under review; but, we regret to say, in the number treating on mineralogy, the want of information displayed by the editor is too apparent; as we feel well assured, that he might have collected from our columns much, which if not deemed by him of sufficient importance to find a place in his manual, or introduction, yet would have set him right on various

points where he is said to be. A reference to chap. 2, pp. 11 to 16, will, we think, amuse the practical miner and geologist, as being quite an original description of lodes, cross-courses, heaves, &c. We trust that the works on botany and floriculture, as also on cookery, are more correct, or we should despair of the utility of the *New Library of Useful Knowledge*.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.
MONDAY.....Trevellick Mining Company—offices, at One.
 Colbre Mining Company—offices, at One.
TUESDAY.....Imperial Fire Office Company—offices, at One.
WEDNESDAY.....Royal Santiago Mining Company—offices, at One.
 Wheel Curtis Mining Company—Guldbell Coffee-house, at Two.
THURSDAY.....London Joint-Stock Bank—offices, at Eleven for Twelve.
 Northampton and Banbury Railway—offices, at Two.
 Jamaica South Midland Junction Railway—London Tavern.
 [The meetings of Mining Companies are inserted among the Mining Intelligence.]

BIRMINGHAM AND OXFORD JUNCTION RAILWAY.

An extraordinary meeting of the shareholders of this company, convened in consequence of a resolution presented to the chairman of the board of directors by Mr. Moxley, and other parties, holding 4000 shares, was held at Dea's Royal Hotel, Birmingham, on Tuesday last, the 24th Dec., for the purpose of considering and determining what course should be adopted with respect to an action brought for a breach of contract by Messrs. Peto and Easted, and also actions brought by the directors against shareholders for non-payment of calls; also to authorise the directors to proceed to Parliament for an Act giving powers to construct a deviation line from Leamington.

P. H. Moxley, Esq., in the chair.
 Mr. Moxley, who has hitherto led the van of the oppositionists to the directors' party, was absent; but his place was supplied by Mr. A. Peto, who opened the business by stating that it had been deemed advisable to defer proceeding in the greater part of the matters for which the meeting had been convened; such only would be considered as were imperative at that moment. The first resolution was—"That application to Parliament be made by this company, in pursuance of the notice inserted in the *London Gazette*, of the 24th day of November last, signed by Mr. Alexander Dobie, and Messrs. Colmore and Beale, for a bill to enable this company to make a deviation in the line of railway between Leamington and Warwick, and to purchase the Stratford-on-Avon Canal, and that Mr. Alexander Dobie and Messrs. Thomas Colmore, and William John Beale be, and they are hereby, appointed solicitors for and on behalf of this company, to solicit such bill in Parliament, and to take all necessary steps for passing the same into an Act."—Mr. Hutchinson, of Lincoln, seconded this resolution; but the chairman refused to put it, on the ground, as he alleged, that he had no inclination to incur the penalty of an infringement of the Vice-Chancellor's injunction, which they would be if the bill had not in it the clause contained in that of last year.—Mr. Colmore, of Birmingham, rejoined that this resolution was merely a preparatory measure, and that the time when the bill was prepared and submitted was the proper occasion for considering whether it was an infringement of the injunction.—Mr. Whateley, the company's solicitor, advised the chairman not to put the resolution, upon which Mr. Peto said, that as he was of opinion it contained nothing inconsistent with the alleged contract of November, 1844, he should himself submit the resolution, especially as the Vice-Chancellor had distinctly stated that he did not wish so to word his injunction that the company would be prevented from taking steps to oppose the Great Western.—Mr. P. then demanded from the chairman the resolution which he had handed to him; but Mr. Moxley refused to return other than a copy of it, although he had declined to put it. Considerable altercation ensued.—Mr. Peto denied the right of the chairman to retain possession of his resolution, but the latter was supported in his resolve by Lord Hatherton and Mr. Spooner, M.P., the latter declaring his belief that the mover and seconder of the resolution, and whoever might put it, would render themselves liable to the penalties consequent on the violation of the Vice-Chancellor's injunction. Ultimately the chairman handed to Mr. Peto a copy of his resolution, but the latter declined to receive it, producing instead a duplicate of the one he had given to Mr. Moxley, and adopting it as the original. This he put to the meeting, and it was carried all but unanimously.—Mr. Peto then produced a seal, which had been obtained in compliance with a resolution at a meeting a short time since, and amidst some laughter he moved the following:—"That the seal now produced be now affixed by Mr. Peto, one of the directors of the company, as the common seal of the company, to the petition to Parliament, now also produced, for leave to introduce a bill for the before-mentioned purposes, and to the declaration now produced as to the means of defraying the expenses of the works to be authorised by such bill."—Mr. Colmore, of Birmingham, seconded the resolution; but the Chairman declined to put it, also remarking that he did not admit of any other seal than that in the possession of the directors. This resolution was thereupon put by Mr. Peto, and declared by him to be carried, and having accordingly affixed the seal to the petition, Mr. Peto next moved, and Mr. Hutchinson seconded, the following resolution:—"That all the expenses to be incurred in soliciting the said bill, or which have been already incurred in giving the notices of the intended application to Parliament, preparing the necessary plans and sections, and making the necessary deposits with the clerk of the peace, and otherwise, as required by the Standing Orders of Parliament, or in any way relating to the intended application to Parliament, be paid and defrayed by the company, and that the directors be instructed to pay an advance to the solicitors appointed at this meeting also such sums of money as shall be from time to time necessary in soliciting such bill in Parliament, and for defraying the expenses ordered to be borne by this company as above-mentioned."—The Chairman refusing to put this resolution also, it was put by Mr. Peto, and carried almost unanimously.

The last resolution submitted by Mr. Peto, and seconded by Mr. Beale, was:—"That this meeting be, and is hereby, adjourned until Friday, the 14th day of January next, at Dea's Royal Hotel, Birmingham, at half-past two o'clock in the afternoon, when the consideration of all the matters and things mentioned and referred to in the resolution under which this meeting is held will be resumed, if necessary."—Mr. Birley, of Liverpool, in the course of a long speech, alluded to in strong terms on the conduct of the directors and their solicitors. He insisted that they (the directors) were regardless altogether of the interests of the shareholders; that in making and pressing for the payment of calls, they had shown how completely insensible they were to the state of the money market, and to its influence upon this proprietary as well as others; that, in fact, nothing whatever had been done to mitigate evils, but everything to annoy and harass. That the solicitors, with great professions of kindly feelings, and diffidence, and bashfulness, had made hundreds of pounds by fees which had no effect, except to reduce a picking for themselves, as were evidenced by the fact that upwards of 500 writs had been served, and upon each there were costs amounting to something like four guineas. Such had been their anxiety to resort to legal proceedings, that whilst they held one hand for a *blot*, in another they held a writ, and threatened a forfeiture of shares if that call was not paid within 21 days, although they knew they had not the power to enforce the threat. He advised that the solicitors should be immediately got rid of and others appointed, and if the directors did not show themselves more alive to the interests of the shareholders, that their annual allowance should be suspended, and that they should thus be starved out. He charged them with buying property at three times its value, and with extending to the Great Western, he said, that if they were to be thrown over to the tender mercies of that company, it should be fully ascertained they were on a sure footing—that the purchasers were in a condition to pay the purchase-money. The Great Western Company were down to a dodge or two, as was well known; but of one thing he was anxious above all others, that they should have their value for their money.—The Chairman replied to the last speaker at some length. He left the defence of the Great Western Company to those who were the guardians of its interests, and with reference to the calls which the directors in this concern had made, and the steps which had been taken to enforce payment of them, he said that those legal proceedings had been rendered necessary to the extraordinary circumstances which had been sent round at the instance of those who acted for the dissentient shareholders; and because the money was required to pay the just debts of the company.

Mr. Whateley, the company's solicitor, defended himself from the observations made by Mr. Birley, and he gave an unqualified contradiction to the assertion of Mr. Moxley at the meeting in November, that bailiffs had been employed to serve writs upon gentlemen in their carriages, or upon 'Change; and he denied that there was any ground whatever for complaint at the manner in which the legal proceedings had been carried out. With reference to the opposition to the directors, he said that some of the leaders amongst the dissentient party had shown a disposition to relent. As a proof, he instanced the fact that one of the requisitionists of this meeting had written to the secretary to declare his purpose to pay his call; adding, that he would no longer be a party to a factious opposition to the Vice-Chancellor's decision.—Mr. C. Shaw, a director, and whose connection with the Direct Birmingham and Leicester Railway will render his name familiar to the public, made some observations about the dissentient shareholders having purchased their shares for a party purpose.—He was replied to by Mr. Beale, Mr. Birley, and other gentlemen; the former declaring that he had himself purchased shares of this concern of Mr. Shaw before the meeting in December, 1844, at which the agreement of sale was submitted.—Mr. Shaw offered some observations in explanation, but accompanied by the marked disapprobation of the meeting; and, the resolution of adjournment having been put, was unanimously carried.

EDINBURGH, LEITH, AND GRANTON RAILWAY.

A special meeting of shareholders was held on Tuesday, at Edinburgh, for the purpose of considering a proposition relative to the terms of amalgamation, authorised with the Edinburgh and Northern Company. It appeared, that a difference had arisen between the two boards, in reference to the interpretation to be put on the terms of the agreement entered into. By the agreement, the stock of the Edinburgh and Granton Company was to be taken at 310,000, and amalgamated at par with the Edinburgh and Northern Company, the amalgamation to take place when both lines were completed, and in full operation. The sum named was in 1846, estimated to be the limit of the expenditure required to finish the Edinburgh and Granton line.

The estimate, however, proved to be too low, owing to a rise in the price of labour and materials, amounting to 20,000, and the increased expense of the tunnel, together with an additional outlay to meet the views of the Edinburgh and Northern Company, which it was alleged would not have occurred had the Granton remained an independent company. Under these circumstances, 340,000, would be required, or 70,000, beyond the original estimate agreed to. The matter in dispute was, whether the 70,000, should be paid by the united companies, or provided solely by the Edinburgh and Granton Company, on the assumption that the latter were bound to deliver their line in a complete state, in consideration of receiving 310,000, stock in the amalgamated company.

After much correspondence on the subject between the directors of both companies, it was agreed, subject to the sanction of the shareholders, to amicably refer the case to the Right Hon. J. A. Stuart Wortley; but, in case of his refusal, to Sir F. Theobald, and abide by his decision on all questions arising out of the agreement between the two companies, dated in March and October, 1846. It was also mutually agreed that the cost of the Granton line should be fixed at 340,000; the extra property of the latter company not to be included in that sum, but to be applied towards the expenditure beyond it. A conversation ensued, in which it was stated that the Edinburgh and Granton Company do not derive a profit from working their line at present; but that, if it had full play, the traffic might be considerably increased.—A resolution was passed authorising the directors to enter into the proposed agreement with the Edinburgh and Northern Company, and to apply to Parliament, if necessary, to enable them to carry it into effect.—The meeting then separated.

SWANSEA DOCK COMPANY.—The adjourned meeting of the shareholders of this company was held yesterday, the 23d inst., at the Townhall, at two o'clock in the afternoon.—Capt. MORGAN, the chairman of the company, occupied the chair.—The adjournment of the former meeting having been read by the SECRETARY, the CHAIRMAN stated that there would be no business transacted on that occasion, further than again to adjourn the meeting to that day three weeks, the 13th of January. The report of the committee of shareholders was then read, stating that no satisfactory arrangement had as yet been come to. A formal resolution having been passed adjourning the meeting according to the recommendation of the chairman, the meeting then separated.—*Cambridge.*

PROPOSED RAILWAY IN TRINIDAD.—The last Trinidad papers contain an interesting account of a meeting held on the 12th Nov., for the purpose of forming a new company for the construction of a railway in that island, at which Lord Harris, the governor of the colony, took the chair. The proposed capital is 800,000, for the 91 miles of line contemplated, but, in the first instance, it was suggested that the distance from Port of Spain to Arima (12 miles) should be completed, the cost of which would be 100,000. The guarantee of 5 per cent. the grant of lands, and other concessions, which were conceded to the recently dissolved company, are to be conferred upon the new one, and a great effort is agreed to be made to render it a matter of domestic interest. With this view it is proposed that, although the general shares shall be for 10s. each, 20,000 shares shall be issued at 1s. each, in order to induce the labouring classes, especially those who would be employed upon the works, to enter as partners into the project. In a long speech the engineer expressed his belief that the shares would ultimately be worth 1200 per cent. of their original cost, not from the profits of traffic, but from the sums that might be realised from the timber growing upon the lands to be conceded to the company by the Crown; and, although this estimate gave rise to some amusement and ridicule, it was generally admitted that the prospects of opening up an active timber trade were of a most satisfactory description. With regard to the prospect of traffic profits, it was admitted by more than one speaker that, at a time when the planters are engaged in "the problem of continuing to make sugar at a cost of \$4 per cwt., which would only sell for \$3," it was hardly safe to entertain any very sanguine expectation. On the whole, however, an advantageous statement was clearly made out, and it seemed evident that the colonists themselves were ready to enter into the undertaking to the limit of their means. It was stated by the chairman, however, that reliance was still placed on the raising the greater portion of the capital in England.

ADCOCK'S PATENT SPRAY PUMP.—This important INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION, the PATENTEE is ready to RECEIVE, and to execute, ORDERS.—Apply to Henry Adcock, C.E., at his offices, No. 3, Northumberland-street, Strand, London, where pamphlets, descriptive of the invention, may be had; at the office of the *Mining Journal*, 26, Fleet-street; and through any respectable bookseller—price 6d.

PATENT GALVANISED IRON AND WIRE ROPE WORKS.

MILLWALL, POPLAR.
 ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD OF GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, affording only £10 per ton instead of £20, under the ordinary process. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

TO ENGINEERS, RAILWAY, AND STEAM-BOAT COMPANIES, AND THE PROPRIETORS OF STEAM-ENGINES GENERALLY.

BENJAMIN GOODFELLOW.
 THE PATENTEE OF THE COMPOUND ACTING AND SELF-ADJUSTING METALLIC PISTONS.

Desires to solicit the attention of the above parties to the said improvement; the peculiar advantages of which are, that they are particularly sensitive to any variation in the size of the cylinder, and will accommodate themselves to an oval, with a constant tendency to wear it cylindrical. The junking, or cover, is brought down upon the bed of the piston securely and truly, leaving the packing perfectly at liberty between the plates—against which the spring presses the outside rings or casing, as well as to the surface of the cylinder, thereby preventing the escape of steam either past or into the piston—at the same time the friction being the least possible.

As there are many, no doubt, still unacquainted with the existence of his pistons, and the same being liable to be imposed upon by parties making and vending in imitation (but with slight variation in form), he takes this opportunity of cautioning them—it being susceptible of many modifications, the simplest and most efficient of which may be seen is the subject of his patent.

The patentee has twice established his exclusive right to the principle of construction of his improved metallic pistons—once in an action "Goodfellow v. Barker," tried on the 11th February, 1846, in the Court of Exchequer, before the Chief Baron and a special jury, when a verdict was found for the plaintiff. In this case the defendant's infringement was a helical or spiral formed spring—thus: around which was placed a metallic casing, to which it gave a compound, or vertical, and lateral pressure, an arrangement which was proved, in both trials, never to have existed before the plaintiff's patent.

A similar result attended a former action, "Goodfellow v. Swindlehurst," tried at the assizes at Liverpool, in March, 1845; the infringement of which was a series of wedge-form segments, acted upon by a flat-spring, thereby producing the compound action.

And, as a proof of the clearness of his established right to the said improvements, the juries in both cases, after long and well contested trials, were not three minutes in finding verdicts for the plaintiff.

B. G. begs to say, that he is prepared to manufacture any size of metallic pistons, or buckets, on the shortest notice; and has, at present, all sizes at work, up to 88 inches diameter, and air-pump buckets up to 48—specimens of which may be seen, and any particulars had, at his works, Hyde, near Manchester. He can rebore the cylinders for the same (when required), without removing them from their places, and will guarantee that all shall be of the best material and workmanship, and engages to give every satisfaction to parties who may favour him with their orders.

There are now upwards of one thousand four hundred of them at work, and principally at very large and respectable firms—a list of which may be had on application, as above.

WHEEL TRESSCOLD (OR "THE MODEL MINE"):

TO BE CONDUCTED ON THE "COST-BOOK" SYSTEM.
 Divided into 500 shares—Deposit £1 per share.

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WHEEL TRESSCOLD is a TIN MINE, and has been selected, from a number of others, as one presenting the fewest obstacles in the way of carrying out the novel experiment of placing the mine on an entire new and *reform* principle—the leading features of which will be found to consist in the economy of capital required to put the mine in an efficient working state.

To conduct the various operations in such a manner, that time, so vital to all undertakings of this kind, may not be neglected—that the largest quantity, and the best quality, of metal may be produced from the smallest quantity of work, and that waste shall entirely be prevented—that the underground workings be so arranged, that returns be made as the several sections are progressing—that the mine be conducted on the most improved and scientific principles of modern mining. That in all the company's affairs there shall be no ambiguity, misrepresentation, or mystery, be employed, which is now found so peculiar to the true interests of mining adventurers, and so beneficial in its effects on this portion of our national industry; and that it shall, if a possibility does exist, be put upon the same footing as any other branch of civil engineering.

The mine is situated in the parish of Luxilian, adjoining Roach, in Cornwall, and in the immediate vicinity of the celebrated Rocks and Beam Mines—well known as two of the richest mines in the county. The set is an extensive one, and contains six large lodes and 11 branches, running nearly east and west; two adits have been driven, one at each end of the set, from which has been taken the finest specimens of tin ever known, and of which weighed 20 lbs., recently sold, perfectly free from Wolfram, or any other deleterious matter. This stone, although many samples have been broken from it, now weighs about 80 lbs., and is to be seen at the office; its assay, in its present form, is 75 per cent. for grain tin, and is considered to be the finest specimen in Europe. There are various other samples, varying in size and quality, taken from the lodes and branches—the very poorest of which will produce 400 lbs. of tin to the 100 sacks of work, which exceeds the general average of tin mines. The samples taken collectively, stand equalled by few, and excelled by none, of the present day.

The lease is granted for a term of 21 years, at one-fiftieth dues, and the works will be commenced as soon as the subscription is filled up. The old works were suspended several years since, in consequence of the proprietor not possessing an adequate capital to prosecute them; they would, however, long before this, have been resumed, but that a heavy premium (£2000) was put on the mine, which was considered by the late freeholder to be its real value. The present proprietors, however, have reduced that sum down to less than £800, and the present company is to be organised, and the mine commenced on the following conditions—viz:—

That the sum of £800 be paid for the grant—the freeholders to pay the entire expense of raising the company (law charges alone excepted), and the proprietors, in consideration of the transfer of the lease to the new company, will take 50 free, or paid-up, shares, to the amount of £5 each, as an equivalent to the commission—they taking the chance of positive remuneration on the success of the enterprise: it is, therefore, proposed that £1 per share be paid on 500 shares—£250 of which to go to the freeholder as a first deposit. A deep adit will then be driven three fathoms under the old workings, being a cross-cut, to intersect all the lodes; when the rich, or main, lode shall be cut, a further sum of £250 shall be paid, and the remainder within twelve months from the date of commencement.

The new adit will be 187 fms. in decomposed granite, the assumed cost of which does not exceed £1 per fathom, timbering included; all the works will be done by contract, and submitted to public competition—the lowest tender to be accepted, provided the securities are approved of by the agents and the manager. As soon as each lode is cut, and convenience will permit, tributors will be set on to raise tin on the backs—an offer has already been made at 7s. 6d. in the pound; by this means, it is supposed nearly enough tin will be produced to pay the entire first working costs, when the whole 17 lodes and branches have been fully developed, which will take about six weeks, the proper locality for the engine will be decided on: about £5 per share is considered sufficient to put the mine down 30 fathoms, and which will be called in during the first year. It would be perfectly absurd for the proprietors to look out any visionary prospects of what the mine will, or may, pay, as the whole concern is an experiment; but any person feeling a desire to form his own estimate of its intrinsic value, may very easily do so, by taking the coach from St. Austell, or Bodmin; and, with the assistance of a pick, go into the present adit, and raise as much ore as he may please, he will find every facility to convince himself, as, from the stream-work adjoining, men may be found who will bring down the stone, and return him the tin in his presence.

For the purpose of rendering this undertaking one of a *bond fide*, as well as one of an economic character, the proprietors undertake to guarantee that the whole expenses of the company's management shall not exceed 12 guineas per month, until a dividend is declared, which is to pay the salary of a purser, two agents on the mine, a visiting clerk, who is to keep and disburse all the accounts, and the rent of a furnished office and committee-room in London.

Any person wishing to form one of the committee of management, may give notice of the same in his application for shares, which are to be made to Samuel B. Sargent, Esq., Callington; W. L. Oliver, Coggeshall, Essex; John Webb Roach, near St. Austell, or the purser, C. S. Richardson, at the office, 5, Whitefriars-street, Fleet-street, London.

MISCELLANEA.
 It has been proposed by several gentlemen in London and Cornwall, that on the first day of commencing operations on the mine, a body of shareholders shall go down and themselves break the first ton of ore, have it stamped down and dressed in their presence the same day, send it to the smelting-works in the adjoining parishes, have it smelted, and each bring away an ingot of pure metal, bearing on its surface inscribed the name of the *MODEL MINE*.

TIN VALE MINING COMPANY, ST. NEOT, COUNTY CORNWALL.

1000 parts, or shares, of £2 per part, or share.

NOW AT WORK ON THE "COST-BOOK" PRINCIPLE.

CHAIRMAN.
 ROBERT OWEN ALAND, Esq., Cambridge-terrace, Hyde-park.

DIRECTORS.
 JOHN POSFORD OSBORNE, Esq., Ardleigh Park, Colchester.
 JOSEPH CARRINGTON RIDGWAY, Esq., Rochester Lodge, Rochester.
 BENJAMIN FORRESTER SCOTT, Esq., Northampton Park, Ball's Pond.
 BARTHOLOMEW DAWES, Esq., Soho-square.
 CAPTAIN THOMAS ROSE, Waterloo, Northampton.
 WILLIAM W. MANSELL, Esq., Purser, Dorchester-place, Blandford-square.

Captain of the Mine.—Mr. John Floyd, Harrowbridge.
 Solicitor.—John Butler, Esq., 134, Tooley-street, Southwark.

Bankers—Messrs. Ransom and Co., London.

PROSPECTUS.

This mine set is situated at Harrowbridge, in the parish of St. Neot, in the county of Cornwall, on the banks of the Drains River, and extends over about 200 acres of mineral land. It is held on lease for 21 years, from the lords of the manor, at a royalty, or due, of 1-15th, and totally free from sleeping or dead rent.

Five tin lodes, underlying south, have already been opened. A shaft has been sunk about 10 fathoms, and two adits driven—one about 80 and another 20 fathoms. The first lode in the chief adit, marked A on the map, has already been opened 10 fathoms to the east, and about 20 fathoms to the west, on the course of the lode, from which ore is procured, and a considerable quantity is now on the bank, ready for stamping.

The second adit, marked B on the map, has been driven 20 fathoms on the course of a lode, of most promising appearance.

Five pairs of stamps are in course of construction, as well as all necessary machinery for carrying on the works efficiently; and Captain Floyd asserts that returns will be made before Christmas.

The ore is of the best description, being free from compound. The tin streams are considerable: they have been secured also for the company, at a royalty, or due, of 1-12th, and arrangements have been made for working them on tribute. The freehold of land, sufficient for the erection of workmen's cottages, has likewise been obtained, and the quantity of granite which abounds in the locality renders building cheap.

The operations of the company are carried on under the "Cost-book" Principle, which exempts the company from the provisions of the Act for the Registration of Joint-Stock Companies (7 and 8 Vic., cap. 110), the 63d section of which enacts—

"Provided always, and be it enacted, that nothing in this Act contained shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, and quarries, of what nature soever, on the principle commonly called the 'Cost-book Principle'."

Under the "Cost-book" Principle, shareholders have the right of determining their responsibility, by giving notice of their intention to relinquish their shares, and on forfeiture of all previous payments. The 15th clause states—

"That any adventurer, or shareholder, may determine his or her responsibility or liability to the affairs of this mine, upon his or her giving notice, in writing, to the purser of the company for the time being, of his or her desire of retiring from the company; and also, upon depositing with the said purser the share or shares held by him or her, and signing a relinquishment of all claims or demands on the company in respect to such share or shares."

The directors, after considerable negotiation, have succeeded in effecting the following arrangement, which they consider highly advantageous to the company—namely: That the present lessees, in consideration of the transfer of the lease to the company, for the machinery in course of erection, and for the works hitherto effected, to be paid the sum of £1000 cash, and to have one-tenth of all profits arising from the mine, until a further sum of £1500 shall have been paid to them; the company having the option of cancelling the letter disbursement on payment of the sum of £1000 on or before the 29th of September, 1848.

Applications for shares to be made to the purser, W. W. Mansell, Esq., at the temporary offices of the company, 17, Dorchester-place, Blandford-square; John Butler, Esq., solicitor to the company, 134, Tooley-street, Southwark; James Lane, Esq., mining broker, 75, Old Broad-street, city; and Messrs. Oliver and Co., stock and share brokers, Coggeshall, Essex—where prospectuses and every information may be obtained; also at the office of the *Mining Journal*.

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EXAMPLES.

Sum.	Prem.	Year.	Bonus added.	Bonus in Cash.	Permanent reduction of Premium.	Assured may receive.
£1000	£0 3 4	1837	£217 15 1	£109 0 11	£16 0 4	£445 0 0
		1838	192 3 0	87 1 4	13 10 2	395 11 1
		1839	165 11 10	74 1 9	11 3 1	346 2 3
		1840	116 7 6	54 10 0	7 18 10	296 13 4
		1841	111 6 8	49 10 0	7 10 4	247 4 8